DEPARTMENT OF CONSUMER & INDUSTRY SERVICES

DIRECTOR'S OFFICE

OCCUPATIONAL HEALTH STANDARDS

Filed with the Secretary of State on December 7, 1990 (as amended April 23, 2001)

These rules take effect 15 days after filing with the Secretary of State

(By authority conferred on the director of the department of consumer and industry services by sections 14 and 24 of 1974 PA 154, MCL 408.1014 and 408.1024 and Executive Reorganization Order Nos. 1996-1 and 1996-2, MCL 330.3101 and 445.2001)

R 325.51102, R 325.51103, R 325.51104, R 325.51105, and R 325.51108 are amended and R 325.51106 is rescinded of the Michigan Administrative Code as follows:

Bureau of Safety and Regulation, Standards Division Web-Site: www.cis.state.mi.us/bsr/divisions/std

PART 301. AIR CONTAMINANTS

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R 325.51101 Applicability; replacement of O.H. rules. Rule 1. (1) These rules do not apply to the following types of employment:

- (a) Agriculture.
- (b) Construction.
- (c) Domestic.
- (d) Mining.
- (2) These rules replace O.H. rules 2101, 2102, 2103, and 2104.

R 325.51102 Definitions.

Rule 2. As used in these rules:

- (a) "Ceiling" means the employee's exposure which shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute, timeweighted average exposure which shall not be exceeded during any part of the working day.
- (b) "Skin designation" means those substances so indicated that have toxic effects due to absorption through an employee's skin.
- (c) "Short-term exposure limit (STEL)" means the employee's 15-minute, time-weighted average exposure which shall not be exceeded at any time during a workday, unless another time limit is specified in a parenthetical notation below the limit. If another time period is specified, then the time-weighted average exposure over that time limit shall not be exceeded at any time during the workday.
- (d) "Time-weighted average (TWA)" means the employee's average airborne exposure in any 8-hour workshift of a 40-hour workweek that shall not be exceeded.
- (e) The terms "substance" and "air contaminant" are equivalent in meaning for purposes of these rules.

R 325.51103 Exposure limits.

- Rule 3. An employer shall ensure that an employee exposure to any substance listed in tables G-1-A or G-2 in R 325.51108 is limited in accordance with the requirements of all of the following provisions:
 - With respect to table G-1-A, all of the following provisions apply:
 - Removed (May 9, 2001).
 - (ii) Removed (May 9, 2001).
 - (iii) An employee's exposure to any substance listed in table G-1-A shall not exceed the time-weighted average (TWA) limit, short-term exposure limit (STEL) and ceiling limit specified for that substance in table G-1-A.
 - (iv) To prevent or reduce skin absorption, an employee's skin exposure to substances listed in table G-1-A with an "X" in the skin designation column following the substance name shall be prevented or reduced to the extent necessary through the use of gloves, coveralls, goggles, or other appropriate personal protective equipment, engineering controls, or work practices.
 - (v) An employee shall not be exposed to air concentrations between the TWA and STEL limits more than 4 times in a workshift and such exposures shall be no less than 60 minutes apart.
 - (b) With respect to table G-2, all of the following provisions apply:
 - An employee's exposure to any substance listed in table G-2 in any 8-hour workshift of a 40-hour workweek shall not exceed the 8-hour, timeweighted average limit given for that substance in table G-2.
 - An employee's exposure to a substance listed in table G-2 shall not exceed, at any time during an

8-hour workshift, the acceptable ceiling concentration limit given for the substance in the table, except for a period of time and up to a concentration that does not exceed the maximum duration and concentration allowed in the column under "Acceptable maximum peak above the ceiling concentration for an 8-hour workshift." For example, during an 8-hour workshift, an employee may be exposed to a concentration of substance A (with a 10 parts of the substance per million parts of air (ppm) TWA, 25 ppm ceiling and 50 ppm peak) above 25 ppm (but not above 50 ppm) only for a maximum period of 10 minutes. Such an exposure shall be compensated for by exposures to concentrations less than 10 ppm so the cumulative exposure for the entire 8-hour workshift does not exceed a time-weighted average of 10 ppm.

If a substance is preceded by an "S", then an employer shall take the necessary precautions to prevent an employee from absorbing the substance through his or her skin.

R 325.51104 Computation formulae.

Rule 4. The computation formulas that shall apply to employee exposure to one or more substances that have an 8-hour, time-weighted average listed in table G-1-A or G-2 to determine whether an employee is exposed in excess of the exposure limit are as follows:

(a) An employer shall compute the cumulative exposure for multiple exposures to a single substance for an 8hour workshift as follows:

 $E = (C_1T_1 + C_2T_2 + ... C_nT_n) \div 8 \text{ hours}$

Where: E is the cumulative exposure for an 8-hour workshift.

- C₁ is the substance concentration during the first period of time "T" where the concentration remains constant.
- is the substance concentration during the second period of time "T" where the concentration remains constant.
- is the period of time in hours for which the substance concentration C remains constant.

The value of E shall not exceed the 8-hour, time-weighted average limit for the substance as specified in table G-1-A or

To illustrate the formula for a cumulative exposure to a single substance, assume that substance A has an 8-hour, time-weighted average exposure limit of 100 ppm noted in table G-1-A. Assume that an employee is subject to the following exposures over an 8-hour workshift:

Two hours' exposure at 150 ppm Two hours' exposure at 75 ppm

Four hours' exposure at 50 ppm

Substituting this information into the formula:

E = [(150 ppm X 2 hrs) + (75 ppm X 2 hrs) + (50 ppm)]X 4 hrs)] / 8 hrs

 $E = [300 \text{ ppm} \cdot \text{hrs} + 150 \text{ ppm} \cdot \text{hrs} + 200 \text{ ppm} \cdot \text{hrs}]$ / 8 hrs

 $E = 650 \text{ ppm} \cdot \text{hrs} / 8 \text{ hrs} = 81.25 \text{ ppm}$

Since the cumulative exposure of 81.25 ppm is less than the exposure limit of 100 ppm, then the employee's 8-hour workshift exposure is acceptable.

(b) An employer shall compute the equivalent exposure for a mixture of air contaminants for an 8-hour workshift as follows:

 $\begin{array}{l} E_{_{m}} = (C_{_{1}} \div \ L_{_{1}} + C_{_{2}} \div \ L_{_{2}}) + ... \ (C_{_{n}} \div \ L_{_{n}}) \\ E_{_{m}} \quad \text{is the equivalent exposure to the mixture of air} \end{array}$ contaminants during an 8-hour workshift.

C₁ is the average 8-hour concentration of the first substance.

- C2 is the average 8-hour concentration of the second substance.
 - is the 8-hour, TWA exposure limit for that particular substance.

The value of E_m shall not exceed a value of one (1.0).

To illustrate the formula for a mixture of air contaminants, assume the following exposures:

Substances in Mixture	Average concentration of 8-hour exposure (C)	8-hour TWA exposure limit (L)
Substance A	500 ppm	1,000 ppm
Substance B	45 ppm	200 ppm
Substance D	40 ppm	200 ppm

Substituting this information into the formula:

(500 ppm / 1,000 ppm) + (45 ppm / 200

ppm) + (40 ppm / 200 ppm)

 $E_{m} = E_{m}$ 0.500 + 0.225 + 0.200

0.925

Since the value of E_m did not exceed one (1.0), the employee's 8-hour workshift exposure to the mixture of air contaminants is acceptable.

R 325.51105 Methods of compliance.

Rule 5. To achieve compliance with the provisions of R 325.51103 and R 325.51104, administrative or engineering controls shall first be determined and implemented when feasible. If such controls are not feasible to achieve full compliance, then personal protective equipment or any other protective measures shall be used to keep the employee's exposure to air contaminants within the exposure limits prescribed in these rules. Any equipment and technical measures used for this purpose shall be approved for each particular use by a competent industrial hygienist or other technically qualified person. When a respirator is used, its use shall comply with the provisions of R 325.60051 et seq. Respiratory Protection, Part 451.

R 325.51106 Rescind (May 9, 2001).

R 325.51107 Stay of enforcement.

Rule 7. Enforcement of the limits are indefinitely stayed for the following substances until the United States department of labor, occupational safety and health administration (OSHA) publishes in the Federal Register a notice that a sampling and analytical technique is available:

- (a) Aluminum alkyls.
- (b) Ethylidine norbornene.
- Hexafluoroacetone. (c)
- Mercury (alkyl compounds). (d)
- Oxygen difluoride.
- (f) Phenylphosphine.
- (g) Sulfur pentafluoride.

R 325.51108 Tables.

Rule 8. Tables G-1-A and G-2 read as follows:

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		L	TWA	ST	STEL®	Cei	Ceiling	
Substance	CAS No.A	bbm ^a	mg/m _{3C}	ppm ^B	mg/m³c	bbm ^B	nem/gm	Skin Designation
Abate		1	15	-		-	-	-
Acetaldehyde	75-07-0	100	180	150	270	1	1	1
Acetic acid	64-19-7	10	25	1	-	1	1	-
Acetic anhydride	108-24-7	-	_	1	1	5	20	-
Acetone	67-64-1	750	1800	1000	2400	1	1	-
Acetonitrile	75-05-8	40	70	09	105	1	1	-
2-Acetylaminofluorine; see O.H. rule 2301(1) ^F	53-96-3							_
Acetylene dichloride; see 1,2-Dichloroethylene								
Acetylene tetrabromide	79-27-6	1	14	-	-	1	1	-
Acetylsalicylic acid (Aspirin)	50-78-2	-	2	1	-	-	1	-
Acrolein	107-02-8	0.1	0.25	0.3	0.8	-	1	-
Acrylamide	79-06-1	-	0.03	-	-	-	1	×
Acrylic acid	79-10-7	10	30	1	-	-	-	×
Acrylonitrile; see R 325.51501 et seq. ^F	107-13-1	2	4.34	10	21.7			
Aldrin	309-00-2	-	0.25	-	_	-	-	×
Allyl alcohol	107-18-6	2	5	4	10	_	1	×
Allyl chloride	107-05-1	٢	3	2	9	-	-	-
Allyl glycidyl ether (AGE)	106-92-3	5	22	10	44	_	-	-
Allyl propyl disulfide	2179-59-1	2	12	က	18	-	1	-

	TABLE G-1-A.	-	EXPOSURE LIMITS FOR AIR CONTAMINANTS	AIR CONTA	MINANTS			
	- The	F	TWA	ST	STEL®	Cei	Ceiling	
Substance	CAS No. ^A	ppm ^B	mg/m³c	bpm ⁸	mg/m _{ac}	amdd	mg/m³c	Skin Designation
a Alumina (aluminum oxide) Respirable fraction Total dust	1344-28-1	1.1	5	1 1	1 1	1 1	1.1	1 1
Aluminum (as Al). Alkyls Metal	7429-90-5	- 1 1	5	- 1 1	1.1	1 1	1.1	1 1
respirable dust Total dust Pyro powders		1 1 1	5 5				1 1 1	1 1 1
Soluble salts Welding fumes*		1 1	5	1 1	1 1	1 1	1 1	1 1
4-Aminodiphenyl; see O.H. rule 2301(2) ^F	92-67-1							
2-Aminoethanol; see Ethanolamine								
2-Aminopyridine	504-29-0	0.5	2	-	-	1	1	1
Amitrole	61-82-5	-	0.2	-	_	-	-	-
Ammonia	7664-41-7	-		35	27	-	-	1
Ammonium chloride fume	12125-02-9	1	10	-	20	1	1	1
Ammonium sulfamate Respirable dust Total dust	7773-06-0	1 1	5 10	1, 1	1,1	1 1	1 1	1 1
n-Amyl acetate	628-63-7	100	525	-	-	1	-	-
sec-Amyl acetate	626-38-0	125	650	-	_	-	1	-
Aniline and homologues	62-53-3	2	8	-	-	-	-	×
Anisidine (o- and p-isomers)	29191-52-4	1	0.5	-	-	-	-	×
Antimony and compounds (as Sb)	7440-36-0	1	0.5	_	-	_	_	-
ANTU (alpha-naphthylthiourea)	86-88-4	1	0.3	-	-	1	-	-

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		F	TWA	ST	STEL	Ce	Ceiling	
Substance	CAS No.A	ppm ⁸	mg/m³c	ppm ⁸	mg/m _{3C}	bbm ^B	mg/m _{3C}	Skin Designation
Arsenic, organic compounds (as As)	7440-38-2	L	0.5	-	_	1	1	1
Arsenic, inorganic compounds (as As); see R 325,51601 et seq. ^F	7440-38-2		0.01					
Arsine	7784-42-1	0.05	0.2	1	1	1	1	1
		L	TWA	ST	STEL			
Asbestos; see R 325.51311 et seq."	Varies	0.1	0.1f/cc					
		ppm ⁸	mg/m ^{3G}	ppm	mg/m _{3C}			
Atrazine	1912-24-9	1	2	1	-	-	1	-
Azinphos-methyl	86-50-0	-	0.2	1	1	-	-	×
Barium, soluble compounds (as Ba)	7440-39-3	1	0.5	1	1	1	1	1
Barium sulfate Respirable dust Total dust	7727-43-7	1 1	5 10	1.1	1.1	1.1	1 1	1.1
Benomyl Respirable dust Total dust	17804-35-2	1.1	5 10	1.1	11	1.1	1.1	1.1
Benzene ^E ; see R 325.77101 et seq. ^F and table G-2 for limits applicable in the operations or sectors excluded in R 325.77101 ^E	71-43-2	-	3.19	2	15.97			
Benzidine; see O.H. rule 2301(3)	92-87-5							
p-Benzoquinone; see Quinone								
Benzo(a)pyrene; see Coal tar pitch volatiles								
Benzoyl peroxide	94-36-0	1	5	_	-	-	1	-
Benzyl chloride	100-44-7	-	9	1	-	- 1	-	

	TABLE G-1-A	· .	EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		t.	TWA	ST	STEL	Cei	Ceiling	
Substance	CAS No. ^A	bbm ⁸	mg/m³c	₈ mdd	mg/m³c	bpm ^B	mg/m³c	Skin Designation
Beryllium and beryllium compounds (as Be)	7440-41-7				See table G-2			
Biphenyl; see Diphenyl								
Bismuth telluride, Undoped Respirable dust Total dust	1304-82-1	- 1	5 51	111	1 1	1 1	1.1	1 1
Bismuth telluride, Se-doped		1	5	1	ı	1	1	1
Borates, Tetra, Sodium Salts Anhydrous Decahydrate Pentahydrate	1330-43-4 1303-96-4 12179-04-3	111	555	111	111	111	111	111
Boron oxide, Total dust	1303-86-2	-	10	-	1	1	1	1
Boron tribromide	10294-33-4	1	1	ı	ı	-	10	1
Boron trifluoride	7637-07-2	-	-	-	1	-	3	1
Bromacil	314-40-9	-	10	-	1	1	1	1
Bromine	7726-95-6	0.1	0.7	0.3	2	1	1	1
Bromine pentafluoride	7789-30-2	0.1	0.7	-	-	-	-	1
Bromoform	75-25-2	0.5	5	ı	Ī	1	1	ı
1,3-Butadiene; see R 325.50091 et seq.F	106-99-0	1	2.2	2	11.1	1	-	1
Butane	106-97-8	800	1900	-	-	-	-	-
Butanethiol; see Butyl mercaptan								
2-Butanone (Methyl ethyl ketone)	78-93-3	200	290	300	885	-	-	-
2-Butoxyethanol	111-76-2	25	120	-	1	-	-	×
n-Butyl acetate	123-86-4	150	710	200	950	1	1	-

		F	TWA	ST	STEL	Cei	Ceiling	
Substance	CAS No. ^A	bbm ^a	™g/m³c	bpm ⁸	mg/m³c	gwdd	mg/m ^{xc}	Skin
sec-Butyl acetate	105-46-4	200	950	1	ı	1	,	,
tert-Butyl acetate	540-88-5	200	950	1	ı	1	1	,
Butyl acrylate	141-32-2	10	55	1	1	ı	ı	'
n-Butyl alcohol (n-butanol)	71-36-3	_	-	-	1	20	150	×
sec-Butyl alcohol (sec-butanol)	78-92-2	100	305	1	1	ı	1	'
tert-Butyl alcohol (tert-butanol)	75-65-0	100	300	150	450	1	1	'
Butylamine	109-73-9	1	1	1	ı	5	15	×
tert-Butyl chromate (as CrO ₃)	1189-85-1	1	1	1	-	-	0.1	×
n-Butyl glycidyl ether (BGE)	2426-08-6	25	135	-	1	1	ı	1
n-Butyl lactate	138-22-7	2	25	-	1	1	1	-
Butyl mercaptan	109-79-5	0.5	1.5	-	-	Į	ı	1
o-sec-Butylphenol	89-72-5	2	30	-	ı	ı	ı	×
p-tert-Butyltoluene	98-51-1	10	09	20	120		1	1
Cadmium; see R 325.51851 et seq. ^F	7440-43-9	-	0.005	-	1	1	ı	1
Calcium carbonate, Respirable dust Total dust	1317-65-3	1 1	5 15	_		1 1	-	1 1
Calcium cyanamide	156-62-7	1	0.5	_	1	1	1	-
Calcium hydroxide	1305-62-0	1	5	_	-	-	-	-
Calcium oxide	1305-78-8	1	5	_	-	_	-	-
Calcium silicate, Respirable dust Total dust	1344-95-2	1 1	5 15		1.1		-	1 1

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		L	TWA	ST	STEL	Cei	Ceiling	
Substance	CAS No. ^A	bpm ⁸	mg/m³c	gwdd	mg/m _{3C}	_g mdd	mg/m³c	Skin Designation
Calcium sulfate, Respirable dust Total dust	7778-18-9	1 1	5 15	1 1	1.1	1 1	1.1	1.1
Camphor, synthetic	76-22-2	ı	2	1	-	,	'	1
Caprolactam, Dust Vapor	105-60-2	1 15	1 20	- 10	3	1 1	1 1	1.1
Captafol (Difolatan ^R)	2425-06-1	-	0.1	ı	1	1	'	'
Captan	133-06-2	1	5	1	-	-	'	,
Carbaryl (Sevin ^R)	63-25-2	1	2	1	-	1	,	'
Carbofuran (Furadan ^R)	1563-66-2	-	0.1	ı	1	1	'	'
Carbon black	1333-86-4	-	3.5	-	1	1	1	-
Carbon dioxide	124-38-9	10,000	18,000	30,000	54,000	1	'	'
Carbon disulfide	75-15-0	4	12	12	36	1	ı	×
Carbon monoxide	630-08-0	35	40	1	ı	200	229	-
Carbon tetrabromide	558-13-4	0.1	1.4	0.3	4	1	1	1
Carbon tetrachloride (Tetrachloromethane)	56-23-5	2	12.6	-	ı	1	,	×
Carbonyl fluoride	353-50-4	2	5	5	15	,	1	,
Catechol (Pyrocatechol)	120-80-9	5	20	-	ı	1	,	×
Cellulose, Respirable dust Total dust	9004-34-6	1 1	5 15	-	1 1	. 1 1	. 1.1	1 1
Cesium hydroxide	21351-79-1	-	2	-	ı	1	,	-
Chlordane	57-74-9	-	0.5	, 1	1		,	×

											9											
		Skin Designation	×	ı		-	1	1	1	-	-	-	×	-		,	×	×				,
	Ceiling	⇒cm/gm	-	ı		1	-	0.4	3	1	,	-	0.4	,		1	-	1				,
	Cei	bbm ⁸	-			1		0.1	-	-	-		0.05			-		1				,
MINANTS	II.	mg/m _{3C}	-	,		3	6.0	'	-	ì	,	,	,	'		'	,	1				,
AIR CONTAI	STEL	bbm ^B	1	,		-	0.3	,	,	-		1	,	,		1	,	-				,
EXPOSURE LIMITS FOR AIR CONTAMINANTS	A	mg/m³c	0.5	0.5		1.5	0.3	,	,	0.3	0.2	350	1	1050		3500	-	0.5				9.78
	TWA	ppm ^B	-	-		0.5	0.1	ı	1	0.5	0.5	75	1	200		1000	1	ı				2
TABLE G-1-A.		CAS No. ^A	8001-35-2	55720-99-5 or	31242-93-0	7782-50-5	10049-04-4	7790-91-2	107-20-0	532-27-4	79-04-9	108-90-7	2698-41-1	74-97-5		75-45-6	53469-21-9	11097-69-1				67-66-3
		Substance	Chlorinated camphene (Toxaphone)	Chlorinated diphenyl oxide		Chlorine	Chlorine dioxide	Chlorine trifluoride	Chloroacetaldehyde	2-Chloroacetophenone (Phenacyl chloride)	Chloroacetyl chloride	Chlorobenzene	o-Chlorobenzylidene malononitrile	Chlorobromoethane	2-Chloro-1,3-butadiene; see β-Chloroprene	Chlorodifluoromethane	Chlorodiphenyl (42% Chlorine) (PCB)	Chlorodiphenyl (54% Chlorine) (PCB)	1-Chloro-2,3-epoxy propane; see Epichlorohydrin	2-Chloroethanol; see Ethylene chlorohydrin	Chloroethylene; see Vinyl chloride	Chloroform (Trichloromethane)

	יארוים בוסהו		L LIMITS TO	EAFUSURE LIMITS FOR AIR CONTAMINANTS	MINANIS			
		L	TWA	ST	STEL	Cei	Ceiling	
Substance	CAS No.A	bbm ⁸	mg/m³c	bpm ⁸	mg/m³c	phudd	mg/m³c	Skin Designation
bis (Chloromethyl) ether; see O.H. Rule 2301(4) ^F	542-88-1	1 4 4						
Chloromethyl methyl ether; see O.H. rule 2301(8)	107-30-2							
1-Chloro-1-nitropropane	600-25-9	4	10	ı	1	,	,	'
Chloropentafluoroethane	76-15-3	1000	6320	1	1	1	1	1
Chloropicrin	76-06-2	0.1	0.7	1	1	,	1	1
beta-Chloroprene	126-99-8	10	35	1	-	,	1	×
o-Chlorostyrene	2039-87-4	50	285	75	428	1	ı	,
o-Chlorotoluene	95-49-8	90	250	ı	1	,	,	,
2-Chloro-6-(trichloromethyl) pyridine, Respirable dust Total dust	1929-82-4	1 1	5 15	1 1	- 1	1 1	1.1	1.1
Chlorpyrifos	2921-88-2	-	0.2	1	1	1	1	×
Chromic acid and chromates (as CrO ₃)	Varies with compound	1	1	1	1	1	0.1	1
Chromium (II) compounds (as Cr)	7440-47-3	1	0.5	, I	-	,	1	ı
Chromium (III) compounds (as Cr)	7440-47-3	1	0.5	-	-	1	ı	ı
Chromium metal (as Cr)	7440-47-3	-	1	-		-	1	ı
Chrysene; see Coal tar pitch volatile								
Clopidol Respirable dust Total dust	2971-90-6	1 1	5 15	1 1	1 1	1 1	1 1	1 1
Coal dust (less than 5% SiO ₂) Respirable quartz dust	-	,	2	1	1	-	1	1

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Coal dust (greater than or equal to 5% SNO.**) Ppm** mg/m** Ppm** Ppm		TABLE G-1-A	١.	EXPOSURE LIMITS FOR AIR CONTAMINANTS	AIR CONTA	MINANTS			
6 CAS No. A ppm mg/m ppm mg/m ppm mg/m mg/m mg/m mg			L	WA	ST	ELº	Cei	ling	
6 65996-93-2 - 0.1	Substance	CAS No. ^A	bbm ^B	mg/m³c	bpm ^a	mg/m³c	bbm ^B	mg/m³c	Skin Designation
Ubles 65996-93-2	Coal dust (greater than or equal to 5% SiO ₂), Respirable dust	ı	1	0.1	,	ı	1	1	1
7440-48-4 - 0.05 - - - - 10210-68-1 - 0.1 - - - - 16842-03-8 - 0.15 (150 - - - - 100-50-8 - 1 - - - - 136-78-7 - 1 - - - - 1319-77-3 5 22 - - - - 1139-77-3 5 22 - - - - 14170-30-3 2 6 - - - - 420-04-2 5 - - - - - 420-04-2 5 - - - - - 420-04-2 5 - - - - - 420-04-2 - - - - - - 4170-30-3 2 5 - - - - 420-04-2 - 2 - - -	Coal tar pitch volatile (as benzene solubles) anthracene, BaP, phenanthrene, acridine, crysene, pyrene	65996-93-2		0.2	1	ı	1	1	1
s Co) 10210-68-1 - 0.1 -	Cobalt metal, dust, and fume (as Co)	7440-48-4	-	0.05	1	1	1	,	,
rins;	Cobalt carbonyl (as Co)	10210-68-1	1	0.1	1	-	-	'	'
as Cu) as Cu) as Cu) by Mary 136-78-7 as Cu) compound as Cu) as Cu) as Cu) by Mary 136-78-7 as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as Cu) as	Cobalt hydrocarbonyl (as Co)	16842-03-8	-	0.1	-	-	-	1	1
sone)	Coke oven emissions; see R 325.50101 et seq. ^F	-		0.15 (150 ug/m³)					11
sone) 136-78-7 - 10 - <	Copper, Dusts and mists (as Cu) Fume (as Cu)	7440-50-8	1.1	0.1	1 1	1 1	_	1 1	- 1 1
sone) 136-78-7 10 - 10 - - - - n 1319-77-3 5 22 - - - - - 123-73-9 2 6 - - - - - 4170-30-3 2 6 - - - - 299-86-5 - 5 - - - - 420-04-2 - 2 - - - - Varies with compound - 5 - - - -	Cotton dust (raw)	-		1	-	-	- 1	1	1
1319-77-3 5 22 -	Crag herbicide (Sesone) Total dust Respirable fraction	136-78-7	1.1	10 5	1.1	1.1	1.1	1.1	1 1
123-73-9 4170-30-3 2 6 -	Cresol, all isomers	1319-77-3	5	22	_	-	-	1	×
299-86-5 - 5 -<	Crotonaldehyde	123-73-9 4170-30-3	2	9	-	_	-	1	ı
98-82-8 50 245 - - - - - 420-04-2 - 2 - - - - Varies with compound - 5 - - - -	Crufomate	299-86-5	-	5	_	-	_	-	-
420-04-2 - 2 - - - Varies with compound - 5 - - -	Cumene	98-82-8	20	245	-	-	_	1	×
Varies with – 5 – – – – – –	Cyanamide	420-04-2	ı	2	_	-	_	_	-
	Cyanides (as CN)	Varies with compound	ı	5	, 1	1	-	ı	×

Substance		F	TWA	ST	STEL®	Cei	Ceiling	
	CAS No. ^A	bbm ⁸	mg/m³c	swdd	mg/m³c	bpm ^a	mg/m³c	Skin Designation
Cyanogen	460-19-5	10	20	1	ı	, 1	'	'
Cyanogen chloride	506-77-4	-	-	-	1	0.3	9.0	1
Cyclohexane	110-82-7	300	1050	-	-	-	-	1
Cyclohexanol	108-93-0	90	200	-	1	1	1	×
Cyclohexanone	108-94-1	25	100	-	1	1	-	×
Cyclohexene	110-83-8	300	1015	1	1	ı	'	1
Cyclohexylamine	108-91-8	10	40	_	ı	ı	1	,
Cyclonite	121-82-4	1	1.5	1	1	1	,	×
Cyclopentadiene	542-92-7	75	200	_	1	1	1	1
Cyclopentane	287-92-3	009	1720	-	1	1	-	,
Cyhexatin	13121-70-5	-	5	-	-	1	1	1
2,4-D (Dichlorophenoxyacetic acid)	94-75-7	-	10	_	1	1	1	1
Decaborane	17702-41-9	0.05	0.3	0.15	6:0	1	,	×
Demeton (Systox ^{III})	8065-48-3	-	0.1	-	1	1	,	×
Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone)	123-42-2	20	240	-	1	ı	, 1	,
1,2-Diaminoethane; see Ethylenediamine								
Diazinon	333-41-5	-	0.1	1	L	ı	1	×
Diazomethane	334-88-3	0.2	0.4	1	-	1	1	'
Diborane	19287-45-7	0.1	0.1	_	-	-	1	-
2-N-Dibutylaminoethanol	102-81-8	2	14	-	-	_	1	-
Dibutyl phosphate	107-66-4	-	5	2	10	-	,	1

The state of the s		F	TWA	ST	STEL	Cel	Ceiling	
Substance	CAS No.*	gwdd	mg/m³c	_B mdd	mg/m _{3C}	bpm ^B	mg/m³c	Skin
Dibutyl phthalate	84-74-2	-	5	ı	1	-	'	,
Dichloroacetylene	7572-29-4	-	-	ı	,	0.1	9.0	'
o-Dichlorobenzene	95-50-1	_	1	ı	ı	20	300	. 1
p-Dichlorobenzene	106-46-7	75	450	110	675	1	,	'
3,3'-Dichlorobenzidine; see O.H. rule 2301(5) [‡]	91-94-1							
Dichlorodifluoromethane	75-71-8	1000	4950	1	1	,	'	,
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	-	0.2	ı	4.0		1	,
Dichlorodiphenyltri-chloroethane (DDT)	50-29-3	1	+	ı	'	1	'	×
1,1-Dichloroethane	75-34-3	100	400	1	1	-	'	,
1,2-Dichloroethylene	540-59-0	200	790	1	-	1	1	'
Dichloroethyl ether	111-44-4	2	30	10	09			×
Dichlorofluoromethane	75-43-4	10	40		-	-	1	1
Dichloromethane; see Methylene chloride								
1,1-Dichloro-1-nitroethane	594-72-9	2	10	1	1	-	1	1
1,2-Dichloropropane; see Propylene dichloride								
1,3-Dichloropropene	542-75-6	1	5	ı	1	-		×
2,2-Dichloropropionic acid	75-99-0	1	9	ı	ı	1	'	1
Dichlorotetrafluoroethane	76-14-2	1000	7000	-	-		1	-
Dichlorvos (DDVP)	62-73-7	_	1	-	1	ı	1	×
Dicrotophos	141-66-2	ı	0.25	1	1	-	1	×

Substance CAS No. Tr.73-6 FRM Mg/ms PRM Mg/ms ATT PRM Mg/ms PRM Mg/ms Cell Mg/ms Cell Mg/ms Cell Mg/ms Cell Mg/ms Cell Mg/ms Skin Designation Dicyclopentalcieny Iron, Tr.73-6 5 30 -		TABLE G-1-A.	A. EXPOSUI	EXPOSURE LIMITS FOR AIR CONTAMINANTS	AIR CONTA	MINANTS			
CAS No. ^A ppm ^B mg/m³c ppm ^B mg/m³c ppm ^B mg/m³c 77-73-6 5 30 - - - - 102-54-5 - 10 5 - - - - 60-57-1 - 10 0.25 - - - - - 111-42-2 3 15 - - - - - - 100-89-7 10 30 25 75 - - - 100-89-7 10 50 - - - - - 111-40-0 1 4 - - - - - - 84-66-2 - 5 - - - - - - 84-66-2 - 5 0.1 0.5 - - - - - 108-18-3 5 20 - - -			L	NA	ST	ELº	Cel	ling	
77-73-6 5 30 -<	Substance	CAS No. ^A	bbm ^B	mg/m³c	bpm ⁸	mg/m³c	ppm ^B	mg/m³c	Skin Designation
102-54-5	Dicyclopentadiene	77-73-6	5	30	1	1	1	1	-
60-57-1 - 0.25 -	Dicyclopentadienyl iron, Respirable dust Total dust	102-54-5	1 1	5 10	1.1	1 1	- 1 1	1.1	1.1
111-42-2 3 15 - - - - - 109-89-7 10 30 25 75 - - - 100-89-7 10 30 25 75 - - - 110-89-7 10 50 - - - - - 111-40-0 1 4 - - - - - 84-66-2 - 5 - - - - 75-61-6 100 860 - - - - 75-61-7 0.1 0.5 - - - - 60 108-83-8 25 150 - - - - 60-11-7 60-11-7 - - - - - - 127-19-5 10 35 - - - - - 124-40-3 10 18 - - - -	Dieldrin	60-57-1	-	0.25	1	1	1	1	×
109-89-7 10 30 25 75 - - 110-37-8 10 50 - - - - 111-40-0 1 4 - - - - 96-22-0 200 705 - - - - 84-66-2 - 5 - - - - 75-61-6 100 860 - - - - 84-66-7 - 5 - - - - 108-83-8 25 150 - - - - 60-11-7 - - - - - 60-11-7 - - - - - 127-19-5 10 35 - - - 124-40-3 10 18 - - -	Diethanolamine	111-42-2	3	15	ı	1	ı	1	-
100-37-8 10 50	Diethylamine	109-89-7	10	30	25	75	1	1	-
111-40-0	2-Diethylaminoethanol	100-37-8	10	90	1	1	ı	1	×
96-22-0 200 705 - <td< td=""><td>Diethylene triamine</td><td>111-40-0</td><td>1</td><td>4</td><td>ı</td><td>-</td><td>1</td><td>-</td><td>×</td></td<>	Diethylene triamine	111-40-0	1	4	ı	-	1	-	×
96-22-0 200 705 - <td< td=""><td>Diethyl ether; see Ethyl ether</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Diethyl ether; see Ethyl ether								
84-66-2 - 5 - </td <td>Diethyl ketone</td> <td>96-22-0</td> <td>200</td> <td>705</td> <td>ı</td> <td>ı</td> <td>ı</td> <td>1</td> <td>-</td>	Diethyl ketone	96-22-0	200	705	ı	ı	ı	1	-
75-61-6 100 860 - - - - 86 - - - - - 108-83-8 25 150 - - - 108-18-9 5 20 - - - 60-11-7 - - - - - 127-19-5 10 35 - - - 124-40-3 10 18 - - -	Diethyl phthalate	84-66-2	1	5	1	1	1	1	1
69-11-7 0.5 - - - - - - - - -	Difluorodibromomethane	75-61-6	100	860	-	1	1	1	-
60-11-7 127-19-5 10 35	Diglycidyl ether (DGE)	2238-07-5	0.1	0.5	ı	ı	1	1	-
108-83-8 25 150 - <td< td=""><td>Dihydroxybenzene; see Hydroquinone</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Dihydroxybenzene; see Hydroquinone								
108-18-9 5 20 - - - - - 60-11-7 127-19-5 10 35 - - - - 124-40-3 10 18 - - - -	Diisobutyl ketone	108-83-8	25	150	ı	1	1	1	-
60-11-7 127-19-5 10 35 - - - 124-40-3 10 18 - - -	Diisopropylamine	108-18-9	2	20	-	1	1	ı	×
127-19-5 10 35 124-40-3 10 18	4-Dimethylaminoazobenzene; see O.H. rule 2301(6) ^F	60-11-7							
127-19-5 10 35 124-40-3 10 18	Dimethoxymethane; see Methylal							1	
124-40-3 10 18 – – –	Dimethyl acetamide	127-19-5	10	35	-	1	ı	1	×
Dimethylaminobenzene; see Xylidine	Dimethylamine	124-40-3	10	18	1	-	1	-	-
	Dimethylaminobenzene; see Xylidine								

Substance Dimethylaniline (N,N-Dimethylaniline)								
Substance Dimethylaniline (N,N-Dimethylaniline)		F	TWA	ST	STEL	Ce	Ceiling	
Dimethylaniline (N,N-Dimethylaniline)	CAS No.A	_B mdd	mg/m³c	bbm ^e	mg/m³c	ewdd	mg/m³c	Skin Designation
	121-69-7	5	25	10	90	-	1	×
Dimethylbenzene; see Xylene								
Dimethyl-1,2-dibromo-2,2- dichloroethyl phosphate	300-76-5	1	ъ	1	,	,	'	×
Dimethylformamide	68-12-2	10	30	ı	-	1	'	×
2,6-Dimethyl-4-heptanone; see Diisobutyl ketone		-						
1,1-Dimethylhydrazine	57-14-7	0.5	-	ı	1	1	-	×
Dimethylphthalate	131-11-3	1	5	ı	-	1	١.	'
Dimethyl sulfate	77-78-1	0.1	0.5	-	1	1	1	×
Dinitolmide (3,5-Dinitro-o-toluamide)	148-01-6	-	2	ı	ı	1	,	,
Dinitrobenzene (all Isomers) (meta-) (ortho) (para-)	99-65-0 528-29-0 100-25-4	1	1	1	1	I	1	×
Dinitro-o-cresol	534-52-1	1	0.2	1	-	1	'	×
Dinitrotoluene	25321-14-6	_	1.5	_	1	ı	1	×
Dioxane (Diethylene dioxide)	123-91-1	25	90	1	1	1	,	×
Dioxathion (Delnav)	78-34-2	1	0.2	1	-	1	-	×
Diphenyl (Biphenyl)	92-52-4	0.2	1	_	-	-	-	ı
Diphenylamine	122-39-4	-	10	-	1	-	,	ı
Diphenylmethane diisocyanate; see Methylene bisphenyl isocyanate								
Dipropylene glycol methyl ether	34590-94-8	100	9009	150	006	1	1	×

	TABLE G-1-A.	_	EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		L	TWA	ST	STEL	Cei	Ceiling	
Substance	CAS No.*	bpm ⁸	mg/m³c	amdd	mg/m _{3C}	bbm ^a	mg/m³c	Skin Designation
Dipropyl ketone	123-19-3	20	235	1	1	,	1	ı
Diquat	2768-72-9	-	0.5	1	1	1	1	1
Di-sec-octyl phthalate [Di(2-ethylhexyl)phthalate]	117-81-7	1	2	-	10	,	-	1
Disulfiram	97-77-8	1	2	1	ı	,	1	1
Disulfoton	298-04-4	-	0.1	1	1	1	ı	×
2,6-Di-tert-butyl-p-cresol (Butylated hydroxytoluene)	128-37-0	ı	10	ı	ı	1	1	ı
Diuron	330-54-1	1	10	ı	ı	1	ı	1
Divinyl benzene	1321-74-0	10	20	ı	1	,	,	1
Emery, Respirable dust Total dust	1302-74-5	1.1	5 10	11	1 1	1.1	-11	1-1
Endosulfan	115-29-7	1	0.1	ı	ı	1	-	×
Endrin	72-20-8	1	0.1	1	1	,	-	×
Epichlorohydrin	106-89-8	2	8	1	1	ı	1	×
EPN	2104-64-5	-	0.5	-	-	-	-	×
1,2-Epoxypropane; see Propylene oxide								
2,3-Epoxy-1-propanol; see Glycidol								
Ethanethiol; see Ethyl mercaptan								
Ethanolamine	141-43-5	3	8	9	15	-	-	-
Ethion	563-12-2	1	0.4	1	-	_	1	×
2-Ethoxyethanol (EGEE)	110-80-5	200	740	ı	1	-	-	×

mg/m³c ppm³ 540 - 1400 - 20 25 1900 - 130 - 230 - 1200 - 300 - 4 - 25 - 25 - 4 2 - - 25 - - - <t< th=""><th></th><th></th><th></th><th>TWA STEI P</th><th>TS</th><th>STELD</th><th>اق</th><th>lina</th><th></th></t<>				TWA STEI P	TS	STELD	اق	lina	
111-15-9 100 540 - <t< th=""><th>Substance</th><th>CAS No.</th><th>199</th><th>mg/m³c</th><th>bbm⁸</th><th>mg/m_{3C}</th><th>gwdd</th><th>mg/m³c</th><th>Skin</th></t<>	Substance	CAS No.	199	mg/m³c	bbm ⁸	mg/m _{3C}	gwdd	mg/m³c	Skin
141-78-6 400 1400 140-88-5 5 20 255 100	2-Ethoxyethyl acetate (Cellosolve acetate)	111-15-9	100	540	ı	1	,	'	×
140-86-5 5 20 25 100 64-17-5 1000 1900 75-04-7 10 18 106-41-4 100 435 125 545 106-35-4 50 230 106-35-4 50 230 106-35-4 50 2500 1100 106-35-4 1000 2600 109-94-4 100 300 109-94-4 100 300 107-07-3 10 85 107-15-3 10 25 107-15-3 10 25 106-93-4 100 25 107-26-5 1 4 2 8 107-26-6 0.1 107-26-6 0.1 107-26-6 0.1 107-26-7 0.1 107-26-7 0.1 107-26-7 0.1 107-26-7 0.1 107-26-7 0.1 107-26-7 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 0.1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1 107-27-1	Ethyl acetate	141-78-6	400	1400	ı	ı	1	'	,
64-17-5 1000 1900 - - - - - 8) 541-85-5 25 130 - - - - - - 100-41-4 100 435 125 545 - - - 100-41-4 100 435 125 545 - - - 100-41-4 100 880 250 1100 - - - - 106-35-4 50 230 - - - - - - 106-35-4 50 250 1100 - - - - - 106-35-4 100 2600 - <t< td=""><td>Ethyl acrylate</td><td>140-88-5</td><td>5</td><td>20</td><td>25</td><td>100</td><td>1</td><td>'</td><td>×</td></t<>	Ethyl acrylate	140-88-5	5	20	25	100	1	'	×
8) 75-04-7 10 18 - - - - - 8) 541-85-5 25 130 -	Ethyl alcohol (Ethanol)	64-17-5	1000	1900	1	1	ı	1	,
6) 541-85-5 25 130 - - - - 100-41-4 100 435 125 545 - - - 74-96-4 200 890 250 1100 - - - 106-35-4 50 230 - - - - - 75-00-3 1000 2600 - - - - - 60-29-7 400 1200 - - - - - 109-94-4 100 300 - - - - - 75-08-1 0.5 1 - - - - - 76-08-1 0.5 1 - - - - - 107-07-3 - - - - - - - 107-15-3 10 25 - - - - - 107-21-1 <td< td=""><td>Ethylamine</td><td>75-04-7</td><td>10</td><td>18</td><td>ı</td><td>ı</td><td>1</td><td>1</td><td>'</td></td<>	Ethylamine	75-04-7	10	18	ı	ı	1	1	'
100-41-4 100 435 125 545 - - 74-96-4 200 890 250 1100 - - - 106-35-4 50 230 - - - - - 75-00-3 1000 2600 - - - - - 109-94-4 100 300 - - - - - 75-08-1 0.5 1 - - - - - 109-94-4 100 300 - - - - - 75-08-1 0.5 1 - - - - - 107-07-3 - - - - - - - 107-15-3 10 25 - - - - - 107-05-2 1 4 2 8 - - - 107-21-1 - - </td <td>Ethyl amyl ketone (5-Methyl-3-heptanone)</td> <td>541-85-5</td> <td>25</td> <td>130</td> <td>,</td> <td>1</td> <td>1</td> <td>'</td> <td>'</td>	Ethyl amyl ketone (5-Methyl-3-heptanone)	541-85-5	25	130	,	1	1	'	'
74-96-4 200 890 250 1100 -	Ethyl benzene	100-41-4	100	435	125	545	1	,	,
106-35-4 50 230 - <td< td=""><td>Ethyl bromide</td><td>74-96-4</td><td>200</td><td>890</td><td>250</td><td>1100</td><td>1</td><td>1</td><td>'</td></td<>	Ethyl bromide	74-96-4	200	890	250	1100	1	1	'
75-00-3 1000 2600 - <	Ethyl butyl ketone (3-Heptanone)	106-35-4	90	230	,	1	1	'	'
60-29-7 400 1200 - 500 1500 - 109-94-4 100 300 - - - - 75-08-1 0.5 1 - - - - 78-10-4 10 85 - - - - 107-07-3 - - - - - - 107-15-3 10 25 - - - - 106-93-4 - - - - - - 107-06-2 1 4 2 8 - - 107-21-1 - - - - - - 628-96-6 - - - - - - -	Ethyl chloride	75-00-3	1000	2600	1	1	1	,	'
75-08-1 0.5 1 -	Ethyl ether	60-29-7	400	1200	1	200	1500	,	'
75-08-1 0.5 1 -	Ethyl formate	109-94-4	100	300	1	ı	1	1	,
78-10-4 10 85 -	Ethyl mercaptan	75-08-1	0.5	1	1	1	ı	,	'
107-07-3 - - - - 1 3 -<	Ethyl silicate	78-10-4	10	85	ī	-	ı	1	1
107-15-3 10 25 -	Ethylene chlorohydrin	107-07-3	-	1	1	ı	-	က	×
Tota-93-4 See table G-2 107-06-2 1 4 2 8 - - - 107-21-1 - - - - - - - - 628-96-6 - - - 0.1 - - -	Ethylenediamine	107-15-3	10	25	,	1	1	'	'
107-06-2 1 4 2 8 -<	Ethylene dibromide	106-93-4				See table G-2			
107-21-1 - - - 50 125 628-96-6 - - 0.1 - -	Ethylene dichloride	107-06-2	1	4	2	8	1	ı	,
628-96-6 0.1	Ethylene glycol	107-21-1	1	-	-	-	20	125	,
Ethylene glycol methyl acetate (EGME); see Methyl cellosolve acetate	Ethylene glycol dinitrate (EGDN)	628-96-6	-	-	-	0.1	1	1	×
	Ethylene glycol methyl acetate (EGME); see Methyl cellosolve acetate		-						

Substance Ethyleneimine; see O.H. rule 2301(7) Ethylene oxide; see R 325.51151 et seq.* Ethylidene chloride; see 1,1-Dichloroethane	CAS No. ^A 151-56-4 75-21-8	TWA	VA		9:0	100		
	CAS No. ^A 151-56-4 75-21-8			STEL	-1-	90	Celling	
- 	151-56-4	bbm ^B	mg/m³c	bbm ⁸	mg/m³c	awdd	mg/m³c	Skin Designation
 	75-21-8							
		1	1.8	5	9.0			
	16219-75-3	1	1	1	1	2	25	'
N-Ethylmorpholine	100-74-3	5	23	1	1	1	1	×
Fenamiphos	22224-92-6	1	0.1	-	-	1	,	×
Fensulfothion (Dasanit)	115-90-2	-	0.1	-	-	1	ı	1
Fenthion	55-38-9	-	0.2	1	-	1	1	×
Ferbam, Dust	14484-64-1	-	10	-	_	1	,	1
Ferrovanadium dust	12604-58-9	-	1	-	3	1	ı	1
Fluorides (as F)	Varies with compound	_	2.5	-	-	-	1	1
Fluorine	7782-41-4	0.1	0.2	1	1	1	1	,
Fluorotrichloromethane (Trichlorofluoromethane)	75-69-4	1	-	-	-	1000	2600	1
Fonofos	944-22-9	_	0.1	_	-	-	1	×
Formaldehyde; see R 325.51451 et seq. ^F	20-00-0	0.75	6.0	2	2.5			
Formamide	75-12-7	20	30	30	45	_	1	1
Formic acid	64-18-6	5	6	_	-	-	-	,
Furfural	98-01-1	2	8	_	-	-	-	×
Furfuryl alcohol	0-00-86	10	40	15	60	_	-	×
Gasoline	8006-61-9	300	006	200	1500	-	-	1

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	AIR CONTA	MINANTS			
		F	TWA	ST	STEL	Cei	Ceiling	
Substance	CAS No. ^A	ppm ^B	mg/m³c	_g wdd	mg/m³c	amdd	mg/m³c	Skin Designation
Germanium tetrahydride	7782-65-2	0.2	9.0	ı	ı		1	'
Glutaraldehyde	111-30-8	1	1	1	ı	0.2	8.0	,
Glycerin, Respirable mist Total mist	56-81-5		5 10	1.1	1.1	1 1	1.1	1.1
Glycidol	556-52-5	25	75	1	-	1	,	,
Glycol monoethyl ether; see 2- Ethoxyethanol								
Grain dust (Oat, wheat, barley)	-	,	10	1	I,	,	,	!
Graphite, natural Respirable dust	7782-42-5	1	2.5	1	ı	,	1	1
Graphite, synthetic, Respirable dust Total dust	1		5 10	1 1	1.1	- 1 1	1.1	1.1
Guthion ^R ; see Azinphos methyl								
Gypsum, Respirable dust Total dust	13397-24-5	1 1	5 15	1.1	1.1	1.1	1.1	1 1
Hafnium	7440-58-6	1	0.5	1	1	-	1	1
Heptachlor	76-44-8	-	0.5	1	, I , 7		١,	×
Heptane (n-Heptane)	142-82-5	400	1600	200	2000	1	1	-
Hexachlorobutadiene	87-68-3	1	0.02	0.24	_	-	1	-
Hexachlorocyclopentadiene	77-47-4	0.01	0.1	-	_	1	1	1
Hexachloroethane	67-72-1	-	10	1	-	-	-	×
Hexachloronaphthalene	1335-87-1	-	0.2	-	1	1	,	×

Substance CAS No.* ppm* mg/m*s ppm* mg/m*s ppm* noroacetone 684-16-2 0.1 0.7 — — — and 110-54-3 50 180 — — — and 110-54-3 50 180 — — — and 110-54-3 50 180 — — — and Varies with 500 180 — — — — and cheef (Methyl r-butyl ketone) 581-78-6 5 20 — — — and cheef (Methyl isobutyl ketone) 108-84-9 50 205 75 300 — and glycol 107-41-5 —		TABLE G-1-A		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
Substance CAS No.^* ppm* mg/m*s ppm* ppm* ppm* nene 884-16-2 0.1 0.7 — — — and 110-54-3 50 180 — — — and Varies with compound 50 180 — — — and cheet Methyl r-butyl ketone) 591-78-6 5 20 — — — and cheet Methyl r-butyl ketone) 108-10-1 50 205 75 300 — and cheet Methyl isobutyl ketone) 108-10-1 50 205 75 300 — and solved Methyl r-butyl ketone) 108-10-1 5 20 — — — — and solved Methyl r-butyl ketone) 108-10-1 5 300 —<			J.	VA	ST	ELº	Cei	ling	
ane 684-16-2 0.1 0.7 — — — ane 110-54-3 50 180 — — — e isomers 110-54-3 50 1800 — — — e isomers Varies with connect 500 1800 — — — — annote (Methyl n-butyl ketone) 591-78-6 5 20 — — — — xyl accetate 108-10-1 50 205 75 300 — — ne glycol 107-41-5 — — — — — — penalted terplrenyls 61788-32-7 0.5 5 — — — — gen bromide 7748-32-7 0.5 5 — — — — gen chloride F) — — — — — — gen chloride F) — — — — — —	Substance	CAS No. ^A	bbm ⁸	mg/m³c	bbm ^B	mg/m³c	₈ mdd	mg/m³c	Skin Designation
sine 110-54-3 50 180 - - - e isomers Varies with compound 500 1800 1000 3600 - anone (Methyl n-butyl ketone) 581-78-6 5 20 - - - e (Methyl isobutyl ketone) 108-10-1 50 205 75 300 - - xyxl acetate 108-84-9 50 300 - - - - ine glycol 107-41-5 - - - - - - - gen action (ethyl isobutyl ketone) 107-41-5 - <	Hexafluoroacetone	684-16-2	0.1	7.0	-	1	ı	,	×
signomers. Varies with compound 500 1800 1000 3800 - anone (Methyl n-butyl ketone) 591-78-6 5 20 - - - - xyl acetate 108-10-1 50 205 75 300 - - - xyl acetate 108-44-9 50 300 - <td>n-Hexane</td> <td>110-54-3</td> <td>90</td> <td>180</td> <td>ı</td> <td>-</td> <td>1</td> <td>'</td> <td>-</td>	n-Hexane	110-54-3	90	180	ı	-	1	'	-
anone (Methyl n-butyl ketone) 591-78-6 5 20 — — — e(Methyl isobutyl ketone) 108-10-1 50 205 75 300 — xxyl acetate 108-84-9 50 300 — — — xxyl acetate 108-84-9 50 300 — — — — ine glycol 107-41-5 — — — — — 25 zine 302-01-2 0.1 0.1 — — — — 25 zine 10035-10-6 — — — — — — — gen bromide 7647-01-0 — — — — — — — gen chloride FS —	Hexane isomers	Varies with compound	500	1800	1000	3600	ı	ı	1
e (Methyl isobutyl ketone) 108-10-1 50 205 75 300 - exyl acetate 108-84-9 50 300 - - - inne glycal 107-41-5 - - - - - - sine acetate 107-41-5 - - - - - - - sine actorised 1178-32-7 0.5 5 -	2-Hexanone (Methyl n-butyl ketone)	591-78-6	5	20	1	1	1	,	-
xyl acetate 108-84-9 50 300 - - - ine glycol 107-41-5 -	Hexone (Methyl isobutyl ketone)	108-10-1	90	205	75	300	,	1	'
tine glycol 107-41-5 - - - - 25 Line 302-01-2 0.1 0.1 - - - - gen atted terphenylis 61788-32-7 0.5 5 - - - - gen bromatide 10035-10-6 - - - - 3 - gen chloride 7647-01-0 - - - - 5 - gen chloride 774-90-8 - - - - 5 - gen cyanide 772-84-1 1 1.4 - - - - gen selenide (as Se) 7783-05-5 0.05 0.2 - - - - gen selenide (as Se) 7783-06-4 10 14 15 21 - - gen sulfide 123-31-9 - 2 - - - - gen sulfide 139-61-1 0.5 3 - <t< td=""><td>sec-Hexyl acetate</td><td>108-84-9</td><td>20</td><td>300</td><td>-</td><td>-</td><td>1</td><td>,</td><td>,</td></t<>	sec-Hexyl acetate	108-84-9	20	300	-	-	1	,	,
sine 302-01-2 0.1 0.1 - - - genated terphenyls 61788-32-7 0.5 5 - - - - gen brownide 10035-10-6 - - - - 3 - gen cyanide 7447-01-0 - - - - 5 - gen cyanide 744-39-3 3 - 6 - - - - gen fluoride (as F) 7664-39-3 3 - 6 -	Hexylene glycol	107-41-5	-	-	1	ı	25	125	-
genated terphenylis 61788-32-7 0.5 5 — — — — gen bromide 10035-10-6 — — — — — 3 — — 3 — — 3 — — 3 — 5 — — 5 — — 5 — — 5 — — — 5 — — 5 — — — — 5 — — 5 — — 5 — — 5 — — 5 — <td< td=""><td>Hydrazine</td><td>302-01-2</td><td>0.1</td><td>0.1</td><td>1</td><td>1</td><td>,</td><td>'</td><td>×</td></td<>	Hydrazine	302-01-2	0.1	0.1	1	1	,	'	×
gen bromide 10035-10-6 - - - - 3 gen chloride 7647-01-0 - - - - 5 - gen cyanide 74-90-8 - - - - 5 - gen fluoride (as F) 7664-39-3 3 - 6 - - - gen fluoride (as F) 7722-84-1 1 1.4 -	Hydrogenated terphenyls	61788-32-7	0.5	5	-	ı	ı	,	-
gen chloride 7647-01-0 - - - - 5 gen cyanide 74-90-8 - - 4.7 5 - 5 gen fluoride (as F) 7664-39-3 3 - 6 - - - gen peroxide 7722-84-1 1 1.4 - - - - gen selenide (as Se) 7783-07-5 0.05 0.2 - - - - gen sulfide 123-31-9 - 2 - - - - oxypropyl acrylate 995-61-1 0.5 3 - - - - oxypropyl acrylate 95-13-6 10 45 - - - - and compounds (as In) 7440-74-6 - - - - - - - and compounds (as In) 7553-56-2 - - - - - - - - -	Hydrogen bromide	10035-10-6	-	-	1	-	3	10	-
gen cyanide 74-90-8 - - 4.7 5 - gen fluoride (as F) 764-39-3 3 - 6 - - gen fluoride (as F) 7722-84-1 1 1.4 - - - gen selenide (as Se) 7783-07-5 0.05 0.2 - - - - gen sulfide 123-31-9 - 2 - - - - quinone 123-31-9 - 2 - - - - oxypropyl acrylate 99-61-1 0.5 3 - - - - yes 13 45 - - - - - - yes 13 45 - - - - - - - yes 13 -	Hydrogen chloride	7647-01-0	-	-	_	-	5	7	1
gen fluoride (as F) 7664-39-3 3 — 6 — — gen peroxide 7722-84-1 1 1.4 — — — gen selenide (as Se) 7783-07-5 0.05 0.2 — — — gen sulfide 7783-06-4 10 14 15 21 — — quinone 123-31-9 — 2 — — — — oxypropyl acrylate 999-61-1 0.5 3 — — — — oxypropyl acrylate 95-13-6 10 45 — — — — and compounds (as In) 7440-74-6 — — — — — — 7553-56-2 — — — — — — — —	Hydrogen cyanide	74-90-8	-	-	4.7	5	1	,	×
gen peroxide 7722-84-1 1 1.4 - <td>Hydrogen fluoride (as F)</td> <td>7664-39-3</td> <td>3</td> <td>1</td> <td>9</td> <td>-</td> <td>-</td> <td>1</td> <td>1</td>	Hydrogen fluoride (as F)	7664-39-3	3	1	9	-	-	1	1
gen selenide (as Se) 7783-07-5 0.05 0.2 - - - - gen sulfide 7783-06-4 10 14 15 21 - - quinone 123-31-9 - 2 - - - - oxypropyl acrylate 999-61-1 0.5 3 - - - - sand compounds (as In) 7440-74-6 - 0.1 - - - - - 7553-56-2 - - - - - - 0.1 - - 0.1	Hydrogen peroxide	7722-84-1	1	1.4	-	ı	1	1	1
gen sulfide 7783-06-4 10 14 15 21 - quinone 123-31-9 - 2 - - - oxypropyl acrylate 999-61-1 0.5 3 - - - syspropyl acrylate 95-13-6 10 45 - - - and compounds (as In) 7440-74-6 - 0.1 - - - - 7553-56-2 - - - - - - 0.1	Hydrogen selenide (as Se)	7783-07-5	0.05	0.2	1	1	1	'	-
quinone 123-31-9 - 2 - - - - oxypropyl acrylate 999-61-1 0.5 3 - - - - sand compounds (as In) 7440-74-6 - 0.1 - - - - - and compounds (as In) 7553-56-2 - - - - 0.1 - - 0.1	Hydrogen sulfide	7783-06-4	10	14	15	21	1	1	1
oxypropyl acrylate 999-61-1 0.5 3 - - - sand compounds (as In) 7440-74-6 - 0.1 - - - - 7553-56-2 - - - - - 0.1	Hydroquinone	123-31-9	_	2	-	-	-	1	,
and compounds (as In) 7440-74-6 10 45	2-Hydroxypropyl acrylate	999-61-1	0.5	3	-	-	-	1	×
and compounds (as In) 7440-74-6 - 0.1 7553-56-2 0.1	Indene	95-13-6	10	45	_	-	-	1	ı
7553-56-2 0.1	Indium and compounds (as In)	7440-74-6	_	0.1	-	-	-	ı	ı
.00	lodine	7553-56-2	_	-	-	1	0.1	-	1

m mg/m³c 10 10 10 10 10 10 10 10 10 10 10 10 10	9.0	na/m³c		SIEL	Cel	Ceiling	
nh 75-47-8 0.6 de fume 1309-37-1 – ntacarbonyl (as Fe) 13463-40-6 0.1 is (soluble) (as Fe) Varies with compound compound compound compound compound compound secondary) 123-92-2 100 alcohol (primary and secondary) 123-92-2 100 150 alcohol defete 78-83-1 50 160 alcohol actate 78-83-1 4 100 one diisocyanate 4096-71-9 0.005 100 yi acetate 108-21-4 250 100 yi alcohol 67-63-0 400 109-59-1 5 yi alcohol 67-63-0 400 108-21-4 5 yi alcohol 67-63-0 400 108-21-4 5 yi alcohol 67-63-0 76-31-0 5 109-10-2 yi alcohol 76-63-0 76-31-0 5 109-10-2 yi alcohol 76-63-0 76-31-0 5 109-10-2 yi alcohol 76-63-0 76-71-0 20 <td< th=""><th></th><th></th><th>ppm⁸</th><th>mg/m³c</th><th>gwdd</th><th>o∉m/gm</th><th>Skin Designation</th></td<>			ppm ⁸	mg/m³c	gwdd	o∉m/gm	Skin Designation
de fume tacarbonyl (as Fe) ts (soluble) (as Fe) ts (soluble) (as Fe) acetate acetate alcohol (primary and secondary) alcohol alcohol alcohol alcohol by acetate compound 123-92-2 100 123-92-2 100 123-92-2 100 123-92-2 100 123-92-2 100 123-92-2 100 123-92-2 100 123-92-2 100 100-19-0 100-19-0 100-19-0 100-19-0 100-19-0 100-19-0 100-59-1 100-59-1 100-59-1 100-59-1 100-59-1 100-59-1 100-59-1 100-50-1 100-50-1 100-10-1 100-10-10-1 100-10-1 100-10-10-1 100-10-10-1 100-10-10-1 100-10-10-1 100-10-10-1 100-10-10-1 100-10-10-1 100-10-10-1 100-10-10-1 100-10-1 100-10-10-1 100-		10	-	1	-	,	-
ts (soluble) (as Fe) ts (soluble) (as Fe) acetate acetate acetate acetate acetate acetate alcohol (primary and secondary) a		10	-	1	1	1	1
ts (soluble) (as Fe) varies with compound acetate alcohol (primary and secondary) alcohol (primary and secondary) alcohol alc		8.0	0.2	1.6	-	'	-
acetate 123-92-2 100 alcohol (primary and secondary) 123-51-3 100 150 alcohol acetate 110-19-0 150 150 alcohol 26952-21-6 50 26952-21-6 50 2000 2000 2000 2000 2000 2000 2000		-	-	,	1	1	ı
alcohol (primary and secondary) 123-51-3 100 alcohol (primary and secondary) 110-19-0 150 alcohol 78-83-1 50 alcohol 78-83-1 40 one 78-59-1 4 one disocyanate 4098-71-9 0.005 yl acetate 108-21-4 250 yl alcohol 67-63-0 400 yl alcohol 75-31-0 5 yl alcohol 768-52-5 2 yl alcohol 768-52-5 2 yl alcohol 768-52-5 2 yl glycidyl ether (IGE) 4016-14-2 50		525	-	1	-	,	-
acetate 110-19-0 150 alcohol 78-83-1 50 alcohol 26952-21-6 50 one 78-59-1 4 one diisocyanate 4098-71-9 0.005 poxyethanol 109-59-1 25 yl acetate 108-21-4 250 yl alcohol 67-63-0 400 yl alcohol 75-31-0 5 yl alcohol 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		360	125	450	-	1	-
alcohol 78-83-1 50 alcohol 26952-21-6 50 one 78-59-1 4 one dilsocyanate 4098-71-9 0.005 opoxyethanol 108-59-1 25 yl acetate 108-21-4 250 yl alcohol 67-63-0 400 ylamine 75-31-0 5 opylanline 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		200	1	1	-	1	-
alcohol 26952-21-6 50 one 78-59-1 4 one dilsocyanate 4098-71-9 0.005 apoxyethanol 109-59-1 25 yl acetate 108-21-4 250 yl alcohol 67-63-0 400 yl alcohol 75-31-0 5 yl alcohol 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		150	1	1	1	1	1
one dilsocyanate 78-59-1 4 one dilsocyanate 4098-71-9 0.005 apoxyethanol 109-59-1 25 yl acetate 108-21-4 250 yl alcohol 67-63-0 400 ylamine 75-31-0 5 opylanitine 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		270	1	1	-	1	×
one dilsocyanate 4098-71-9 0.005 apoxyethanol 109-59-1 25 yl acetate 108-21-4 250 yl alcohol 67-63-0 400 ylamine 75-31-0 5 opylaniline 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		23	1	1	-	1	1
apoxyethanol 109-59-1 25 yl acetate 108-21-4 250 yl alcohol 67-63-0 400 ylamine 75-31-0 5 opylaniline 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		-	0.02	1	-	-	×
yl acetate 108-21-4 250 yl alcohol 67-63-0 400 ylamine 75-31-0 5 opylaniline 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		105	-	-	-	1	1
yl alcohol 67-63-0 400 ylamine 75-31-0 5 opylaniline 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50		950	310	1185	1	1	1
ylamine 75-31-0 5 opylaniline 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50	400	980	200	1225	1		1
opylaniline 768-52-5 2 yl ether 108-20-3 500 yl glycidyl ether (IGE) 4016-14-2 50	5	12	10	24	1	1	1
yl ether (IGE) 4016-14-2 500	_	10	ı	1	-	1	×
yl glycidyl ether (IGE) 4016-14-2 50	500	2100	-	,	1	1	. 1
- International Control of the Contr		240	75	360	,	1	'
1 1	1 1	5 10	1.1	1.1	1.1	1 1	1.1
Ketene 463-51-4 0.5 0.9		6.0	5:	8	,	,	-

	TABLE G-1-A.	_	EXPOSURE LIMITS FOR AIR CONTAMINANTS	AIR CONTA	MINANTS			
		F	TWA	STI	STEL	Cei	Ceiling	
Substance	CAS No.A	bbm ^B	∞m/gm	ppm ^B	mg/m³c	gwdd	mg/m³c	Skin Designation
Lead inorganic (as Pb); see R 325.51901 et seq. ^F	7439-92-1	1	0.05 (50 ug/m³)	_	1	1	ı	1
Limestone, (calcium carbonate) Respirable dust Total dust	1317-65-3	1 1	5 15	=	1 1	-	1 1	1 1
Lindane	58-89-9	1	0.5	_	-	1	1	×
Lithium hydride	7580-67-8	1	0.025	_	-	-	-	1
L.P.G. (Liquified petroleum gas)	68476-85-7	1000	1800	_	1	-	1	1
Magnesite, Respirable dust Total dust	546-93-0	1 1	5 15	-	1.1	1 1	1.1	1.1
Magnesium oxide fume, Total particulate	1309-48-4	ı	10	_	1	1	1	1
Malathion dust	121-75-5	-	10	_	-	-	-	×
Maleic anhydride	108-31-6	-	-	_	-	-	-	1
Manganese, Compounds (as Mn) Fume (as Mn)	7439-96-5	1.1	1 -		lθ	1 1	. 5	1.1
Manganese cyclopentadienyl tricarbonyl (as Mn)	12079-65-1	1	0.1	1	-	1	'	×
Manganese tetroxide (as Mn)	1317-35-7	1	-	-	-	1	-	1
Marble (calcium carbonate), Respirable dust Total dust	1317-65-3		5 15	- 1	1 1	1 1	1.1	1.1
Mercury Inorganic and aryl compounds (As Hg) Organic compounds (as Hg) Vapor (as Hg)	7439-97-6	1 1 1	0.01 0.05	1 1 1	0.03	1 1 1	0.1	×××

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		F	TWA	IS	STEL	Cei	Ceiling	
Substance	CAS No. ^A	bbm ^B	mg/m³c	gwdd	mg/m³c	bbm ⁸	mg/m³c	Skin Designation
Mesityl oxide	141-79-7	15	09	25	100	1	1	'
Methacrylic acid	79-41-4	20	70	-	1	1	'	×
Methanethiol; see Methyl mercaptan								
Methomyl (Lannate)	16752-77-5	1	2.5	1	1	,	'	1
Methoxychior dust	72-43-5	1	10	1	1	1	,	'
2-Methoxyethanol; see Methyl cellosolve								
4-Methoxyphenol	150-76-5	1	5	1	ı	1	'	-
Methyl acetate	79-20-9	200	610	250	760	1	'	'
Methyl acetylene (Propyne)	74-99-7	1000	1650	1	-	1	'	
Methyl acetylene-propadiene mixture (MAPP)	1	1000	1800	1250	2250	-	1	1
Methyl acrylate	96-33-3	10	35	ı	1	1	1	×
Methylacrylonitrile	126-98-7	-	3	1	1	1	,	×
Methylal (Dimethoxymethane)	109-87-5	1000	3100	1	-	1	1	-
Methyl alcohol	67-56-1	200	260	250	325	1	1	×
Methylamine	74-89-5	10	12	1	1	-	Į.	-
Methyl amyl alcohol; see Methyl isobutyl carbinol								
Methyl n-amyl ketone	110-43-0	100	465	1	-	-	-	-
Methyl bromide	74-83-9	2	20	-	-	-	ı	×
Methyl n-butyl ketone; see 2-Hexanone								
Methyl cellosolve (2-Methoxyethanol)	109-86-4	25	80	-	1	- 1	,	×

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		F	TWA	STI	STEL®	Cei	Ceiling	
Substance	CAS No.A	_B wdd	mg/m³c	bbm ⁸	mg/m ^{xc}	bbm ^a	mg/m³c	Skin Designation
Methyl cellosolve acetate (2-Methoxyethyl acetate)	110-49-6	25	120	_	1	,	, '	×
Methyl chloride	74-87-3	20	105	100	210		1	-
Methyl chloroform (1,1,1-Trichloroethane)	71-55-6	350	1900	450	2450	1	1	1
Methyl 2-cyanoacrylate	137-05-3	2	8	4	16	-	1	1
Methylcyclohexane	108-87-2	400	1600	_	-	1	1	1
Methylcyclohexanol	25639-42-3	90	235	-	1	1	-	-
o-Methylcyclohexanone	583-60-8	90	230	75	345	,	1	×
Methylcyclopentadienyl manganese tricarbonyl (as Mn)	12108-13-3	-	0.2	-	1	,	1	×
Methyl demeton	8022-00-2	-	0.5	-	-	1	1	×
4,4'-Methylene bis(2-chloroaniline) (MBOCA)	101-14-4	0.02	0.22	_	1	-	-	×
Methylene bis(4-cyclohexylisocyanate)	5124-30-1	1	-	_	-	0.01	0.11	1
Methylene bisphenyl isocyanate (MDI)	101-68-8	1	-	_	-	0.02	0.2	1
Methylene chloride, see R 325.51651 et seq. ^r	75-09-2	25	87	125	434			
Methylenedianiline (MDA); see R 325.50051 et seq. ^r	101-77-9	10 ppb**	0.08 mg/m³	100 ppb**	0.8 mg/m³	1 -	1	ı
Methyl ethyl ketone (MEK); see 2-Butanone								
Methyl ethyl ketone peroxide (MEKP)	1338-23-4	-	-	_	_	0.7	9	. 1
Methyl formate	107-31-3	100	250	150	375	_	1	1
Methyl hydrazine	60-34-4	1	-	_	_	0.2	0.35	×
Methyl iodide	74-88-4	2	10	ı	-	-	-	×

		F	TWA STEL	ST	STEL	Ce	Ceiling	
Substance	CAS No. ^A	bbm ⁸	mg/m³c	bbm ^a	mg/m³c	bbm ⁸	o _c m/6m	Skin
Methyl isoamyl ketone	110-12-3	90	240	1	1	1	1	-
Methyl isobutyl carbinol	108-11-2	25	100	40	165	1	-	×
Methyl isobutyl ketone; see Hexone								
Methyl isocyanate (MIC)	624-83-9	0.02	0.05	1	1	1	1	×
Methyl isopropyl ketone	563-80-4	200	705	-	1	ı	1	,
Methyl mercaptan	74-93-1	0.5	1	1	1	ı	,	-
Methyl methacrylate	80-62-6	100	410	1	1	1	'	
Methyl parathion	298-00-0	1	0.2	1	1	1	1	×
Methyl propyl ketone; see 2-Pentanone								
Methyl silicate	681-84-5	1	9	-	1	2	30	
alpha-Methyl styrene	98-83-9	20	240	100	485	1	,	1
Metribuzin	21087-64-9	1	5	-	1	1	-	,
Mica; see Silicates								
Molybdenum, (as Mo) Insoluble compounds Soluble compounds	7439-98-7	1 1	10	1.1	1.1	1.1	1.1	1.1
Monocrotophos (Azodrin ^R)	6923-22-4	1	0.25	-	1	ı	1	1
Monomethyl aniline	100-61-8	0.5	2	-	. 1	1	1	×
Morpholine	110-91-8	20	70	30	105	1	1	×
Naphtha (Coal tar)	8030-30-6	100	400	-	1	-	1	
Naphthalene	91-20-3	10	90	15	75	1	1	-
alpha-Naphthylamine;	134-32-7							

Substance CAS No.^4 ppm³ mg/m³c Ppm³ mg/m³c Ppm³ mg/m³c Centing beta-Naphthydamine; see O.H. rule 2301(11)f 13453-39-3 0.001 0.007 — <td< th=""><th></th><th>TABLE G-1-A.</th><th></th><th>EXPOSURE LIMITS FOR AIR CONTAMINANTS</th><th>R AIR CONTA</th><th>MINANTS</th><th></th><th></th><th></th></td<>		TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
Substance CAS No.* ppm* mg/m*s ppm* mg/m*s ppm* mg/m*s phthylarline; 91-59-8			L	WA	ST	ELº	Cel	ling	
H. rule 2301(11)* H. rule 2301(11)* arthorny((as Ni)) T440-02-0 and insoluble compounds (as Ni) arthorny((as Ni)) T440-02-0 and insoluble compounds (as Ni) T440-02-0 and insoluble compounds (as Ni) T440-02-0 and insoluble compounds (as Ni) T440-02-0 B. 54-11-5 B	Substance	CAS No. ^A	bpm ⁸	mg/m³c	gwdd	mg/m³c	_e mdd	mg/m³c	Skin Designation
and insoluble compounds (as Ni) 7440-02-0 and insoluble compounds (as Ni) 7440-02-0 and insoluble compounds (as Ni) 94-11-5 100-01-6 100-01-6 100-01-6 100-00-5 100-00-6 100-00-6 100-01-6 100-00-6 100-01	beta-Naphthylamine; see O.H. rule 2301(11)*	91-59-8			1				
and insoluble compounds (as Ni) se compounds (as Ni) be compounds (as Ni) se compound	Nickel carbonyl (as Ni)	13463-39-3	0.001	0.007	-	-	1	'	'
54-11-5 - 0.5 -	Nickel, Metal and insoluble compounds (as Ni) Soluble compounds (as Ni)	7440-02-0	- 1 1	0.1	1.1	1.1	1.1	1.1	1.1
7697-37-2 2 5 4 10 - - 10102-43-9 25 30 - - - - 100-01-6 - 3 - - - - 100-00-5 - 1 5 - - - - 100-00-5 - 1 - - - - 100-00-5 - 1 - - - - 100-00-5 - 1 - - - - 100-00-5 - 1 - - - - 100-00-5 - 1 - - - - 100-00-5 - 1 - - - - 100-00-5 - 1 1.8 - - - 1010-24-0 - - 1 1.8 - - - 1010-25-5 100 250 - - - - - 108-03-2 25 90 - - - - - 108-03-2 10 35 - - - - - 109-05-2 -	Nicotine	54-11-5	, 1	0.5	ı	-	1	'	×
10102-43-9 25 30 100-01-6 3	Nitric acid	7697-37-2	2	5	4	10	1	1	'
100-01-6 - 3 - - - - 98-95-3 1 5 - - - - 100-00-5 - 1 - - - - 10102-44-0 - 1 1.8 - - 10102-44-0 - - 1 1.8 - - 10102-44-0 - - 1 1.8 - - 10102-44-0 - - 1 1.8 - - 55-63-0 - - 0.1 - - 108-03-2 25 100 250 - - - 108-03-2 25 90 - - - - 108-03-2 25 90 - - - - 108-03-2 10 35 - - - - 108-05-0 - - - - -	Nitric oxide	10102-43-9	25	30	1	-	1		'
98-95-3 1 5 - - - - rule 2301(12) ^F 92-93-3 - 1 - - - - - 100-00-5 - 1 - - - - - 79-24-3 100 310 - - - - - 10102-44-0 - - 1 1.8 - - - 7783-54-2 10 29 - - - - - 55-63-0 - - - - - - 108-03-2 25 90 - - - - 108-04-9 10 35 - - - - 62-75-9	p-Nitroaniline	100-01-6	1	3	-	-	1	,	×
100-00-5 - 1 - - - - 100-00-5 - 1 - - - - 79-24-3 100 310 - - - - 10102-44-0 - - 1 1.8 - - 7783-54-2 10 29 - - - - 55-63-0 - - - - - 108-03-2 25 90 - - - 79-46-9 10 35 - - - 62-75-9	Nitrobenzene	98-95-3	-	5	ı	-	1	,	×
rule 2301(12) ^F 92-93-3 100 310 - - - - - - 10102-44-0 - - 1 1.8 - - - 7783-54-2 10 29 - - - - 55-63-0 - - - - - 108-03-2 25 90 - - - 79-46-9 10 35 - - - - 62-75-9	p-Nitrochlorobenzene	100-00-5	1	1	-	-	ı	,	×
79-24-3 100 310 - - - - - - - 10102-44-0 - - 1 1.8 - - - 7783-54-2 10 29 - - - - 55-63-0 - - - - - 75-52-5 100 250 - - - - 108-03-2 25 90 - - - - 79-46-9 10 35 - - - - 62-75-9	4-Nitrodiphenyl; see O.H. rule 2301(12) ^F	92-93-3							
10102-44-0 - - 1 1.8 - - 7783-54-2 10 29 - - - - - 55-63-0 - - - - - - 75-52-5 100 250 - - - - 108-03-2 25 90 - - - - 62-75-9 10 35 - - - -	Nitroethane	79-24-3	100	310	ı	-	1	,	,
7783-54-2 10 29 - - - - - - 55-63-0 - - - 0.1 - - - - 75-52-5 100 250 - - - - - - 108-03-2 25 90 - - - - - 52-76-9 10 35 - - - - -	Nitrogen dioxide	10102-44-0	1	-	1	1.8	1	ı	'
55-63-0 - - - 0.1 - - 75-52-5 100 250 - - - - - 108-03-2 25 90 - - - - - 79-46-9 10 35 - - - - - 62-75-9 - - - - - - -	Nitrogen trifluoride	7783-54-2	10	29	-	-	ı		1
75-52-5 100 250 - - - - - 108-03-2 25 90 - - - - - 79-46-9 10 35 - - - - - 62-75-9 - - - - - - -	Nitroglycerin	55-63-0	-	-	-	0.1	1	,	×
108-03-2 25 90 - - - - - 79-46-9 10 35 - - - - - 62-75-9 62-75-9 - - - - - -	Nitromethane	75-52-5	100	250	-	-	ı	ı	,
79-46-9 10 35 - - - 62-75-9	1-Nitropropane	108-03-2	25	90	-	-	1	1	1
	2-Nitropropane	79-46-9	10	35	-	-	1	1	,
	N-Nitrosodimethylamine; see O.H. rule 2301(13) ^F	65-75-9							

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		T.	TWA	ST	STEL®	Cei	Ceiling	
Substance	CAS No.A	bpm ^B	mg/m³c	ewdd	o _x w/6w .	awdd	mg/m³c	Skin Designation
Nitrotoluene o-Isomer m-isomer p-isomer	88-72-2 99-08-1 99-99-0	7	-	1	ı	; I	ı	×
Nitrotrichloromethane; see Chloropicrin								
Nonane	111-84-2	200	1050	ı	ı	1	1	'
Octachloronaphthalene	2234-13-1	ı	0.1	1	0.3	1	'	×
Octane	111-65-9	300	1450	375	1800	1	,	1
Oil mist, mineral	8012-95-1	1	5	1	ı	1	'	-
Osmium tetroxide (as Os)	20816-12-0	,	0.002	1	900.0	1	'	
Oxalic acid	144-62-7	1	1	1	2	1	,	-
Oxygen difluoride	7783-41-7	1	-	1	1	0.05	0.1	-
Ozone	10028-15-6	0.1	0.2	0.3	9.0	1	1	1
Paraffin wax fume	8002-74-2	1	2	1	1	1	,	-
Paraquat, respirable dust	1910-42-5 2074-50-2 4685-14-7	1	0.1	-	ı	1	1	×
Parathion	56-38-2	-	0.1	_	_	-	1	×
Particulates not otherwise regulated, Respirable dust Total dust	111	1 1	5 15		1.1	1 1	- 1-1	1 1
Pentaborane	19624-22-7	0.005	0.01	0.015	0.03	_	1	-
Pentachloronaphthalene	1321-64-8	1	0.5	-	_	_	-	×
Pentachlorophenol	87-86-5	ı	0.5	-	-	-	,	×
	1							

Substance CAS No.^* ppm* ppm* ppm* ppm* ppm* ppm* ppm* ppm*		TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
Substance CAS No.^* ppm* ppm* ppm* ppm* ppm* ppm* ppm* ppm*			F	WA	STI	ELº	Cei	ling	
Athritiol, tust T15-77-5 - 5 -	Substance	CAS No.A	ppm ^B	mg/m³c	bbm ⁸	∞mg/m³c	bbm ⁸	mg/m³c	Skin Designation
none (Methyl propyl ketione) 109-66-0 600 1800 750 2250 ovethylene (Tetrachloroethylene) 107-18-4 25 170 ovethylene (Tetrachloroethylene) 127-18-4 25 170 yf fluoride 7516-94-6 3 14 6 28 yf fluoride 7516-94-6 3 14 6 28 able dust 7516-94-6 3 14 6 28 ust m distillates (Naphtha) 400 1600 ust solvent) 108-95-2 5 19 <t< td=""><td>Pentaerythritol, Respirable dust Total dust</td><td>115-77-5</td><td>1 1</td><td>5 10</td><td>1 1</td><td>1.1</td><td>1 1</td><td>1.1</td><td>1.1</td></t<>	Pentaerythritol, Respirable dust Total dust	115-77-5	1 1	5 10	1 1	1.1	1 1	1.1	1.1
none (Methyl propyl ketone) 107-87-9 200 700 250 875 — oethylene (Tetrachloroethylene) 127-18-4 25 170 — — — — oonethylene (Tetrachloroethylene) 158-42-3 0.1 0.8 — — — — ownethyl mercaptan 7616-94-6 3 14 6 28 — — — — yl fluoride 7616-94-6 3 14 6 28 —	Pentane	109-66-0	009	1800	750	2250	1	1	-
oethylene (Tetrachloroettylene) 127-184 25 170 - - - omethyl mercaptan 594-42-3 0.1 0.8 - - - - yl fluoride 7616-94-6 3 144 6 28 - - able dust 7616-94-6 3 146 6 28 - - - ust 400 1600 -	2-Pentanone (Methyl propyl ketone)	107-87-9	200	700	250	875	ı	ı	-
yi fluoride 594-42-3 0.1 0.8 -	Perchloroethylene (Tetrachloroethylene)	127-18-4	25	170	-	-	1	1	1
yf fluoride 7616-94-6 3 14 6 28 - able dust ust	Perchloromethyl mercaptan	594-42-3	0.1	0.8	ı	1	1	1	- 1
able dust but that the distribution (Naphtha) In distribution (Naphtha) I	Perchloryl fluoride	7616-94-6	3	14	9	28	1	1	-
m distillates (Naphtha) 400 1600 - - - ar solvent) 108-95-2 5 19 - - - liazine 92-84-2 - 5 - - - - Inenediamine 106-50-3 - 0.1 - - - - - sther diamine 101-84-8 1 7 -	Perlite Respirable dust Total dust	93763-70-3	1 1	5 15	1.1	1 1	1 1	1.1	1.1
inazine 92-84-2 5 19 - - - fenediamine 92-84-2 - 5 - - - - fenediamine 106-50-3 - 0.1 - - - - - - - sther-biphenyl mixture, vapor - 1 7 -	Petroleum distillates (Naphtha) (Rubber solvent)		400	1600	1	ı	1	ı	1
liazine 92-84-2 - 5 - <	Phenol	108-95-2	2	19	1	1	1	1	×
Idenediamine 106-50-3 - 0.1 -	Phenothiazine	92-84-2	1	5	1	1	1	1	×
ether, vapor 101-84-8 1 7 —	p-Phenylenediamine	106-50-3	1	0.1	1	1	1	1	×
ether-biphenyl mixture, vapor - 1 7 - - - - thylene; see Styrene 122-60-1 1 6 - - - - - slycidyl ether (PGE) 100-63-0 5 20 10 45 - - - - ydrazine 108-98-5 0.5 2 - <td>Phenyl ether, vapor</td> <td>101-84-8</td> <td>1</td> <td>7</td> <td>-</td> <td>-</td> <td>1</td> <td>1</td> <td>-</td>	Phenyl ether, vapor	101-84-8	1	7	-	-	1	1	-
thylene; see Styrene 122-60-1 1 6 - - - slycidyl ether (PGE) 100-63-0 5 20 10 45 - ydrazine 108-98-5 0.5 2 - - - nercaptan 638-21-1 - - - - - - specification 298-02-2 - - - - - - -	Phenyl ether-biphenyl mixture, vapor	-	1	7	-	-	1	1	-
glycidyl ether (PGE) 122-60-1 1 6 - - - - ydrazine 100-63-0 5 20 10 45 - - - nercaptan 108-98-5 0.5 2 - - - - - hosphine 638-21-1 - - - - 0.05 - - - -	Phenylethylene; see Styrene								
ydrazine 100-63-0 5 20 10 45 - nercaptan 108-98-5 0.5 2 -	Phenyl glycidyl ether (PGE)	122-60-1	-	9	_	-	1	1	-
nercaptan 108-98-5 0.5 2 -	Phenylhydrazine	100-63-0	2	20	10	45	-	1	×
hosphine 638-21-1 0.05 - 0.05 - 298-02-2 - 0.05 - 0.2	Phenyl mercaptan	108-98-5	0.5	2	-	-	-	1	-
298-02-2 - 0.05 -	Phenylphosphine	638-21-1	ı	1	1	-	0.05	0.25	-
	Phorate	298-02-2	1	0.05	-	0.2	1	1	×

Substance CAS No.^A ppm* Phosdrin (Mevinphos ^R) 7786-34-7 - Phospere (Carbonyl chloride) 75-44-5 0.1 Phosphoric acid 7803-51-2 0.3 Phosphorus (yellow) 7723-14-0 - Phosphorus pentachloride 10025-87-3 0.1 Phosphorus pentachloride 1314-80-3 - Phosphorus prichloride 85-44-9 1 Phosphorus trichloride 85-44-9 1 Phosphorus trichloride 85-44-9 1 Phosphorus trichloride 85-44-9 1 Phosphorus trichloride 85-44-9 1 Pictoram, Respirable dust 1918-02-1 Piperazine dihydrochloride 142-64-3 - Piperazine dihydrochloride 88-89-1 - Piperazine dihydrochloride 142-64-3 - Piperazine dihydrochloride 26499-65-0 - Piaster of Paris (Calcium sulfate), 26499-65-0 - Protal dust - - Protal dust - <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
CAS No.* 7786-34-7 75-44-5 7803-51-2 7664-38-2 7664-38-2 7723-14-0 10025-87-3 10025-87-3 10025-87-3 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 1918-02-1 1918-02-1 1918-64-3 one) 83-26-1 te), 26499-65-0		TWA	ST	STEL®	PO	Celling	
7786-34-7 75-44-5 7803-51-2 7664-38-2 7723-14-0 10025-87-3 10026-13-8 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 1918-02-1 142-64-3 one) 83-26-1 te), 26499-65-0		mg/m³c	amdd	mg/m³c	Bmdd	mg/m ^{3C}	Skin Designation
75-44-5 7803-51-2 7664-38-2 7723-14-0 10025-87-3 10026-13-8 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 142-64-3 one) 83-26-1 te), 26499-65-0		0.1	-	0.3	1	1	×
7803-51-2 7664-38-2 7723-14-0 10025-87-3 10026-13-8 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 142-64-3 Indione) 83-26-1 ulfate), 26499-65-0	75-44-5	0.4	_	-	-	-	'
7664-38-2 7723-14-0 10025-87-3 10026-13-8 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 142-64-3 Indione) 83-26-1 ulfate), 26499-65-0		0.4	1	1	ı	'	,
7723-14-0 10025-87-3 10026-13-8 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 142-64-3 Indione) 83-26-1 01fate), 26499-65-0		1	1	3	-	'	'
10025-87-3 10026-13-8 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 142-64-3 Indione) 83-26-1 ulfate), 26499-65-0		0.1	-	-	ı	'	,
10026-13-8 1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 142-64-3 Indione) 83-26-1 ulfate), 26499-65-0		9.0	1	ı	ı	'	'
1314-80-3 7719-12-2 85-44-9 626-17-5 1918-02-1 1918-02-1 88-89-1 142-64-3 sulfate), 26499-65-0		1	-	-	1	1	'
7719-12-2 85-44-9 626-17-5 1918-02-1 1918-02-1 1918-02-1 142-64-3 indandione) 83-26-1 m sulfate), 26499-65-0		1	1	3	1	'	'
85-44-9 626-17-5 1918-02-1 1,3-indandione) 88-89-1 142-64-3 13-indandione) 83-26-1 3lcium sulfate), 26499-65-0		1.5	0.5	3	1	,	'
626-17-5 1918-02-1 1918-02-1 88-89-1 1-1,3-indandione) 83-26-1 2alcium sulfate), 26499-65-0		9	1	-	1	'	,
1918-02-1 88-89-1 142-64-3 9) 83-26-1 26499-65-0		5	1	1	ı	,	,
88-89-1 142-64-3) 83-26-1 26499-65-0		5	1 1	1.1	1 1		1.1
142-64-3 () 83-26-1 26499-65-0		0.1	1	1	1	'	×
26499-65-0		5	ı	ı	ı	1	'
26499-65-0	83-26-1	0.1	-	1	1	'	'
	26499-65-0	5 15	1 1		, =	1 1	1 1
Platinum (as Pt) 7440-06-4 – Soluble salts –	7440-06-4	0.002	1 1	1 1	1 1	1 1	1 1

				_	_	_		_		30	_	_	_									_
		Skin Designation	1.1	'	,	×		-	,	-	1	-	-	1	-	×	1		-	ı	,	
	Ceiling	_{эк} ш/вш	1.1	2	1	1		1	1	1	1	1	1	1	1	1	-		1	1	1	
	Cell	bbm ⁸	1 1	-	-	1		1	1	ı	1	1	1	1	1	1	1		1	1	ı	,
MINANTS	ı.º	mg/m _{3C}	1.1	1	1	1		-	,	1050	625	170	510	1	540	-	1		1	-	1	06
EXPOSURE LIMITS FOR AIR CONTAMINANTS	STEL	bbm ⁸	1 1	1	1	1		1	-	250	250	40	110	-	150	-	-		-	-	ì	20
E LIMITS FOR	A	mg/m ^{2C}	5	1	1800	2		30	0.5	840	200	105	350	0.3	360	5	50		5	15	0.4	45
	AWT	ppm ^B	1.1	1	1000	1		10	1	200	200	25	75	0.05	100	2	20		-	5	0.1	ç
TABLE G-1-A.		CAS No.A	65997-15-1	1310-58-3	74-98-6	107-19-7	57-57-8	79-09-4	114-26-1	109-60-4	71-23-8	627-13-4	78-87-5	6423-43-4	107-98-2	75-55-8	75-56-9		8003-34-7	110-86-1	106-51-4	108-46-3
		Substance	Portland cement, Respirable dust Total dust	Potassium hydroxide	Propane	Propargyl alcohol	beta-Propriolactone; see O.H. rule 2301(14) ^f	Propionic acid	Propoxur (Baygon)	n-Propyl acetate	n-Propyl alcohol	n-Propyl nitrate	Propylene dichloride	Propylene glycol dinitrate	Propylene glycol monomethyl ether	Propylene imine	Propylene oxide	Propyne; see Methyl acetylene	Pyrethrum	Pyridine	Quinone	Resorcinol

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		L	TWA	STI	STEL	Cei	Ceiling	
Substance	CAS No. ^A	bbm ^B	mg/m _{ac}	ppm ⁸	mg/m³c	bbm ⁸	mg/m³c	Skin Designation
Rhodium, Insoluble compounds (as Rh)	7440-16-6	,	0.1	٠,	1	,	,	
Metal fume (as Rh)		ı	0.1	1	ı	ı	ı	1
Romal	299-84-3		5		1		'	'
Rosin core solder pyrolysis products,			2					
Rotenone	83-79-4				,		·	' '
Rouge, Respirable dust Total dust	ı	1.1	5	- 1 1	1 1	- 1 1		1.1
Selenium compounds (as Se)	7782-49-2	,	0.2	1	1	,	1	,
Selenium hexafluoride (as Se)	7783-79-1	0.05	9.0	1	-	1	1	,
Silica, amorphous, precipitated and gel	112926-00- 8	-	9	ı	1		1	1
Silica, amorphous, diatomaceous earth, containing less than 1% crystalline silica	61790-53-2	1	9	,	1		1	1
Silica, crystalline cristobalite, Respirable dust	14464-46-1	-	0.05	,	1	1	1	1
Silica, crystalline quartz, Respirable dust	14808-60-7	1	0.1	,	, I	1	,	1
Silica, crystalline tridymite, Respirable dust	15468-32-3	-	0.05	,	1		,	1
Silica, crystalline tripoli, Respirable dust	1317-95-9	-	0.1	1	1	-	ı	1
Silica, fused, Respirable dust	0-98-9299	-	0.1	1	1	_	1	1

		TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
			L	TWA	STI	STEL	Cei	Ceiling	
	Substance	CAS No.*	₈ mdd	mg/m _{3C}	awdd	mg/m _{ac}	_e mdd	mg/m³c	Skin Designation
Silicati	Silicates (less than 1% crystalline silica)								
	Mica, respirable dust	12001-26-2	-	3	-	-	1	,	1
	Soapstone, respirable dust	-	-	3	-	-	-	,	-
	Soapstone, total dust	-	-	9	_	1	1	'	-
	Talc (containing asbestos); use asbestos limit	1		R3	25.51311 et se	R 325.51311 et seq., Asbestos for General Industry	or General Inc	Justry	
	Talc (containing no asbestos), respirable dust	14807-96-6	1	2	-	-	1	,	,
	Tremolite			R 325.51311	et seq.,	Asbestos for General Industry	eral Industry		
Silicon, Respir Total d	illicon, Respirable dust Total dust	7440-21-3	1.1	5	-	1 1	1 1	1.1	1.1
Silicor Resp Total	Silicon carbide, Respirable dust Total dust	409-21-2		5 10	1 1	1.1	1.1	1 1	1.1
Silicon	Silicon tetrahydride	7803-62-5	2	7	1	1	1	'	'
Silver, Ag)	Silver, metal and soluble compounds (as Ag)	7440-22-4	-	0.01	1	1	ı	1	1
Soaps	Soapstone; see Silicates								
Sodium azi (as HN ₃) (as NaN ₃)	Sodium azide (as HN ₃) (as NaN ₃)	26628-22-8	1.1	1.1	-	1.1	0.1	0.3	××
Sodiur	Sodium bisulfite	7631-90-5	-	5	-	1	-	1	-
Sodiur	Sodium fluoroacetate	62-74-8	1	0.05	_	0.15	-	1	×
Sodiur	Sodium hydroxide	1310-73-2	1	1	1	-	-	2	-

Substance CAS No.* ppm* mg/m* ppm* mg/m* ppm* mg/m* ppm* mg/m* Designation Sociam metabbaulifie 7881-574 - 5 -		TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
Substance CAS No.** ppm* mgim*s ppm* mgim*s ppm* mgim*s metablisulfile 7681-574 — 5 — — — — able dust 9005-25-8 — 15 — — — — Lust 7805-27-3 0.1 0.5 — — — — d solvent 8052-41-3 100 555 — — — — — line 605-61-3 100 555 — <			F	WA	ST	EL	Cei	ling	
metablisurifie 7681-57.4 — 5 —	Substance	CAS No. ^A	ppm ⁸	mg/m³c	gwdd	∞mg/m ^{3C}	umdd	mg/m³c	Skin Designation
blable dust black	Sodium metabisulfite	7681-57-4	1	5	1	ı		1	-
d solvent 7803-52-3 0.1 0.5 —	Starch, Respirable dust Total dust	9005-25-8	- 1	5 15	1 1	1.1	1 1	1.1	1.1
8052-41-3 100 525 - <	Stibine	7803-52-3	0.1	0.5	ı	1	,	1	1
yice enzymes) 57-24-9 - 0.15 - - - - yice enzymes) 9014-01-1 -	Stoddard solvent	8052-41-3	100	525	1	1	,	1	-
ytic enzymes) 9014-01-1 -	Strychnine	57-24-9	-	0.15	1	1	,	1	-
ytic enzymes) 9014-01-1 — — — 0.00006 — — \$7-50-1 — 5 — — — — — \$7-50-1 — 15 — — — — — \$1 — 15 — — — — — \$2 2 5 10 — — — — — \$1 2551-62-4 1000 6000 — — — — — — \$2 2551-62-4 1000 6000 —	Styrene	100-42-5	50	215	100	425	1	i	-
57-50-1 5 - 5 - </td <td>Subtilisins (Proteolytic enzymes)</td> <td>9014-01-1</td> <td>-</td> <td>1</td> <td>1</td> <td>0.00006 (60 min.)</td> <td>-</td> <td>-</td> <td>ı</td>	Subtilisins (Proteolytic enzymes)	9014-01-1	-	1	1	0.00006 (60 min.)	-	-	ı
1446-09-5 2 5 10 - - 1551-62-4 1000 6000 - - - - - 16 7664-93-9 - 1 - - - - - - 16 10025-67-9 - - - 1 6 -	Sucrose, Respirable dust Total dust	57-50-1	1.1	5 15	1 1	1.1		1 ,1	1 1
1 2551-62-4 1000 6000 - - - - - - 1 7664-93-9 - 1 - - - - - - - 8 10025-67-9 - - - 1 6 - 8 5714-22-7 - - - 0.01 0.1 7783-60-0 - - - 0.1 0.4 2699-79-8 5 20 10 40 - - ston 35400-43-2 - 1 - - - - orothenoxyacetic acid) 93-76-5 - 10 - - - -	Sulfur dioxide	7446-09-5	2	5	5	10			-
le 7664-93-9 - 1 -	Sulfur hexafluoride	2551-62-4	1000	0009	1	-	-	1	-
e 10025-67-9 - - - - 1 6 e 5714-22-7 - - - - 0.01 0.01 0.01 f 7783-60-0 - - - - 0 0.01 0.04 f 2699-79-8 5 20 10 40 - - - - ston 35400-43-2 - 1 - - - - - - ston 93-76-5 - 10 - - - - - -	Sulfuric acid	7664-93-9	-	1	1	1	1	1	-
e 5714-22-7 - - - - 0.01 0.1 0.1 7783-60-0 - - - - 0.01 0.04 0.04 2699-79-8 5 20 10 40 - - - - ston 35400-43-2 - 1 - - - - - ston 35400-43-2 - 1 - - - - - - ston 35400-43-2 - 1 -	Sulfur monochloride	10025-67-9	-	-	-	-	-	9	-
7783-60-0 - - - - 0.1 0.4 - 2699-79-8 5 20 10 40 - - - ston 35400-43-2 - 1 - - - - ston 93-76-5 - 10 - - - -	Sulfur pentafluoride	5714-22-7	-	1	1	-	0.01	0.1	-
2699-79-8 5 20 10 40 - - ston 35400-43-2 - 1 - - - - ston 93-76-5 - 10 - - - -	Sulfur tetrafluoride	7783-60-0	1	1	_	-	0.1	0.4	1
ston atomphenoxyacetic acid) 93-76-5 - 10	Sulfuryl fluoride	2699-79-8	5	20	10	40	1	1	-
eton lorophenoxyacetic acid) 93-76-5 –	Sulprofos	35400-43-2	-	1	_	-	4	1	1
lorophenoxyacetic acid) 93-76-5 –	Systox ⁿ , see Demeton								
Talc; see Silicates	2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	93-76-5	1	10	-	-	1	ı	1
	Talc; see Silicates								

	IABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	A AIR CONTA	MINANTS			
		F	TWA	ST	STEL	Cei	Ceiling	
Substance	CAS No.A	bbm ⁸	mg/m³c	bbm ^B	mg/m ^{3C}	bbm ^B	mg/m³c	Skin Designation
Tantalum, metal and oxide dust	7440-25-7	-	5	1	1	1	1	-
TEDP (Sulfotep)	3689-24-5	-	0.2	1	1.	1	'	×
Tellurium and compounds (as Te)	13494-80-9	1	0.1	1	1	1	,	-
Tellurium hexafluoride (as Te)	7783-80-4	0.02	0.2	-	1	1	1	,
Temephos, Respirable dust Total dust	3383-96-8	1 1	5	11	1.1	11	- 1 1	1.1
TEPP	107-49-3	١	90.0	1	-	1	1	×
Terphenyls	26140-60-3	,	1	1	1	0.5	2	-
1,1,1,2-Tetrachloro-2, 2-difluoroethane	76-11-9	200	4170	ı	ı	1	,	-
1,1,2,2-Tetrachloro-1, 2-difluoroethane	76-12-0	200	4170	1	-	1	'	-
1,1,2,2-Tetrachloroethane	79-34-5	1	7	1	1	1	ı	×
Tetrachloroethylene; see Perchloroethylene								
Tetrachloromethane; see Carbon tetrachloride								
Tetrachloronaphthalene	1335-88-2	1	2	1	1	1	1	×
Tetraethyl lead (as Pb)	78-00-2	-	0.075	-) I	-	1	×
Tetrahydrofuran	109-99-9	200	290	250	735	ı	1	,
Tetramethyl lead (as Pb)	75-74-1	1	0.075	-	-	-	1	×
Tetramethyl succinonitrile	3333-52-6	0.5	3	-	-	-	ı	×
Tetranitromethane	509-14-8	1	8	_	-	_	-	ı
Tetrasodium pyrophosphate	7722-88-5	1	5	-	_	_	1	ı
Tetryl (2,4,6-Trinitrophenylmethylnitramine)	479-45-8	_	1.5	-	-	-	ı	×

		F	TWA	TWA STEL	STEL	Cei	Ceiling	
Substance	CAS No.*	_g wdd	mg/m _{3C}	Bmdd	mg/m _{ac}	gwdd	mg/m³c	Skin
Thallium, soluble compounds (as TI)	7440-28-0	1	0.1	1	-	-	'	×
4,4"-Thiobis(6-tert-butyl-m-cresol)	96-69-5							
Respirable dust Total dust		1 1	c 9	1 1	1 1	1 1	1 1	' '
Thioglycolic acid	68-11-1	-	4	,	,	,	,	×
Thionyl chloride	7719-09-7	'	-	1	,	-	s	,
Thiram	137-26-8	ı	2	1	-	'	'	,
Tin, Inorganic compounds (except oxides) (as Sn) Organic compounds (as Sn) Oxides (as Sn)	7440-31-5 7440-31-5 21651-19-4	111	2 0.1 2	111	1 1 1	111	111	l×ı
Titanium dioxide Total dust	13463-67-7	1	10	-	-	-	'	ŀ
Toluene	108-88-3	100	375	150	260	1	1	,
Toluene-2,4-diisocyanate (TDI)	584-84-9	0.005	0.04	0.02	0.15		1	'
m-Toluidine	108-44-1	2	6	-	1	1	1	×
o-Toluidine	95-53-4	2	22	1	1	1	1	×
p-Toluidine	106-49-0	2	6	1	1	'	1	×
Toxaphene; see Chlorinated camphene								
Tremolite; see Silicates								
Tributyl phosphate	126-73-8	0.2	2.5	1	1	ı	ı	'
Trichloroacetic acid	76-03-9	-	7	_	-	-	ı	1
1,2,4-Trichlorobenzene	120-82-1	,	1	-	-	22	40	

	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		L	TWA	ST	STEL	Cel	Ceiling	
Substance	CAS No.A	bpm ⁸	mg/m _{3C}	awdd	mg/m³c	bbm ^B	mg/m³c	Skin Designation
1,1,1-Trichloroethane; see Methyl chloroform								
1,1,2-Trichloroethane	79-00-5	10	45	1	-	1	ı	×
Trichloroethylene	79-01-6	20	270	200	1080	1	. 1	-
Trichloromethane; see Chloroform								
Trichloronaphthalene	1321-65-9	-	2	-	1	1	ı	×
1,2,3-Trichloropropane	96-18-4	10	09	_	-	-	1	-
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1000	7600	1250	9500	1	1	-
Triethylamine	121-44-8	10	40	15	09	1	ı	-
Trifluorobromomethane	75-63-8	1000	6100	_	-	-	1	-
Trimellitic anhydride	552-30-7	0.005	0.04	-	-	-	1	-
Trimethylamine	75-50-3	10	24	15	36	1	ı	-
Trimethyl benzene	25551-13-7	25	125	-	-	-	-	-
Trimethyl phosphite	121-45-9	2	10	-	1	1	ı	-
2,4,6-Trinitrophenol; see Picric acid								
2,4,6-Trinitrophenylmethylnitramine; see Tetryl								
2,4,6-Trinitrotoluene (TNT)	118-96-7	-	0.5	_	-	_	-	×
Triorthocresyl phosphate	78-30-8	1	0.1	_	-	_	-	×
Triphenyl amine	603-34-9	L	5	_	-	_	-	-
Triphenyl phosphate	115-86-6	ı	8	-	ı	-		-

_	_
-3	7
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	TABLE G-1-A.		EXPOSURE LIMITS FOR AIR CONTAMINANTS	R AIR CONTA	MINANTS			
		L	TWA	ST	STEL®	Ce	Ceiling	
Substance	CAS No. ^A	_B mdd	mg/m _{3C}	gwdd	mg/m _{ac}	_g wdd	mg/m³c	Skin Designation
Tungsten Insoluble compounds (as W) Soluble compounds (as W)	7440-33-7	1.1	5+	1 1	10	- 1	1	1
Turpentine	8006-64-2	100	260	ı	1	1	'	'
Uranium (as U) Insoluble compounds Soluble compounds	7440-61-1	1 1	0.2	1.1	9.0	1.1	1.1	1.1
n-Valeraldehyde	110-62-3	20	175	1	1		'	-
Vanadium pentoxide Fume (as V ₂ O ₅) Respirable dust (as V ₂ O ₅)	1314-62-1	1.1	0.05	1.1	1.1		1.1	1.1
Vegetable oil mists Respirable mist Total mist	-	1.1	5 15		11	1 1	1.1	1 1
Vinyl acetate	108-05-4	10	30	20	09	1	1	1
Vinyl benzene; see Styrene								
Vinyl bromide	593-60-2	2	20	-	-	1	1	-
Vinyl chloride; see 325.51401 et seq.*	75-01-4	-	2.5	5	12.8			
Vinyl cyanide; see Acrylonitrile								
Vinyl cyclohexene dioxide	106-87-6	10	90	-	, 1	1	1	×
Vinylidene chloride (1,1-Dichloroethylene)	75-35-4	1	4	-	-	ī	1	1
Vinyl toluene	25013-15-4	100	480	-	ı	1	ı	1
VM & P Naphtha	8032-32-4	300	1350	400	1800	-	-	ı
Warfarin	81-81-2	1	0.1	-	-	1	1	1
Welding fumes (Total particulate)*	-	1	5	-	-	1	1	1

			TAMP CATEL DISTRICT OF STEEL D	T S	STEL D	2	Calling	
Substance	CAS No.A	bpm ⁸	mg/m³c	bbm ^a	mg/m _{3C}	_B mdd	∞m/gm	Skin
Wood dust, all soft and hard woods			u		ę			Designation
(except western red cedar)	,	·	,	<u>'</u>	2	١		'
Wood dust, Western red cedar Xylene (o- m. n. lenmare)	1330-20-7	1 00	2.5	150	- 855	'		
(Dimethyl benzene)	-03-000	2	S .	3	3	ı	ı	ı
m-Xylene-alpha, alpha'-diamine	1477-55-0	ı	1	1	1	ı	0.1	×
Xylidine	1300-73-8	2	10	-	-	ı	,	×
Yttrium	7440-65-5	1	11	-	1	1	1	,
Zinc chloride fume	7646-85-7	1	1	1	2	ı	,	,
Zinc chromate (as CrO ₃)	Varies with compound	1	1	ı	1	ı	1.0	'
Zinc oxide fume	1314-13-2	1	5	-	10	1	,	,
Zinc oxide, Respirable dust Total dust	1314-13-2	1.1	5	- 1	1.1	1 1	1.1	1 1
Zinc stearate Respirable dust Total dust	557-05-1	1.1	5 10	1 1	1.1	1 1	1.1	
Zirconium compounds (as Zr)	7440-67-7	1	5	-	10	1	'	'

- As determined from breathing-zone air samples
 - Parts per billion. ;
- The CAS number is for information only. Enforcement is based on the substance name. For an entry covering more than 1 metal compound measured as the metal, the CAS number for the metal is given - not the CAS number for the individual compounds. ⋖
 - Parts of vapor or gas per million parts of contaminated air by volume at 25°C and 760 torr. m O O m
 - Approximate milligrams of substance per cubic meter of air.
 - Duration is for 15 minutes, unless otherwise noted.
- production, oil and gas drilling and production, natural gas processing, and the percentage exclusion for liquid mixtures. For the excepted subsegments, the exposures are consistently under the action level. These subsegments include the distribution and sale of fuels, sealed containers and pipelines, coke The final benzene standard in R 325,77101 et seq. applies to all occupational exposures to benzene, except some subsegments of industry where benzene limits in table G-2 apply
- Caution--this rule contains extensive requirements for exposure to these substances. ш

EXPOSURE LIMITS FOR AIR CONTAMINATES TABLE G-2

	באו ספסוגר רווו	EXPOSORE CIMILO FOR AIR CONTAININALES	NAILES	
Substance	8-hour, time-	Acceptable ceiling	Acceptable maximur concentrati	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour workshift.
	weignted average	concentration	Concentration	Maximum duration
S Benzene ^{E,F}	10 ppm	25 ppm	20 ppm	10 minutes
Beryllium and beryllium compounds	2 µg/m³	5 µg/m³	25 µg/m³	30 minutes
S Ethylene dibromide	20 ppm	30 ppm	50 ppm	5 minutes

Note: S above signifies that skin contact shall not be allowed.